

Information and Communication Technology Appropriation:
ECUADOR

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CHAPTER ONE

1.1. INTRODUCTION

Over the past two decades we have witnessed a techno-utopianism in which the development of new technologies is allegedly set to bring about radical, but fortunately beneficent, social change. Such thinking remains prevalent in much research related with the advent of ICTs. Projections and recommendations that technology will have enormous social effect, that its adoption is unavoidable, and that in the long run it will be beneficial for all have been numerous but have seldom considered specific contexts and social differences in societies.

In this thesis I argue that ICTs do not generate transformations in society themselves. They are not neutral. They are designed and implemented by people in their social, economic, political, cultural and technological contexts. ICT- dissemination, appropriation and use differ between and within countries. In some countries ICTs have led to broad changes in society. In others, change has happened only within some sectors of the population.

ICTs, nonetheless, have been studied predominately from a technological determinist position in which the technology itself is assumed to be a major and isolatable variable which causes social change and progress. This way of thinking has been the frame for many studies and e-Readiness models. Many of these studies have been developed in North America, Western Europe and Eastern Asia¹ but carried over to other, less resourced countries.

They have been the starting point for many Latin America ICT studies², which have tended to focus on infrastructure technology rather than on the content, the services and uses that technologies are supposed to deliver within the specific realities of Latin American countries.

¹ See, for example, the Information Technologies Group, Center for International Development at Harvard University, [Readiness for the Networked World: A Guide for Developing Countries](http://cyber.law.harvard.edu/readinessguide/readiness.html). Available at: <http://cyber.law.harvard.edu/readinessguide/readiness.html> According to them: "e-Readiness is the degree to which a community is prepared to participate in the Networked World. It is gauged by assessing a community's relative advancement in the areas that are most critical for ICT adoption and the most important applications of ICTs".

² Latin American ICT research was based on e-Readiness "foreign" models developed mainly for international organizations such as the World Bank, United Nations, Asian Pacific Economic Cooperation and the European Union.

In many studies, policies and project proposals, ICTs appeared to be an utopian solution to limitations, structural problems and social differences in these countries. For many Latin America countries, however, after an initial techno-determinist euphoria, differences between theory and practice have shown that the challenges of ICT-adoption are more difficult than anticipated as most of the Latin American nations are poor and are dealing with several other perhaps more pressing, social, political and economical inequalities and challenges at the same time.

I will argue also that in Latin America the changes introduced by ICTs and the so-called "information society"³ not only promise benefits but also significant costs. They set new discrimination parameters due to the gap existing between those with greater access to new technologies and the excluded. This exclusion or digital divide of impoverished groups coincides with other types of exclusion: social, cultural, gender, and ethnical, strengthening the social divides as well as the digital.

Social realities challenge the initial view of ICTs and development and call for a deeper understanding about ICT-adoption and appropriation and the need for a broader analysis. We need, to a greater extent, to take in consideration the limitations and the challenges that the implementation, diffusion and use imply.

During recent years, alternative approaches and discourses have begun to emerge in Latin America. Many governments, civil society organizations as well as the private sector have incorporated ICTs into their activities and consequently, they have begun to develop studies, networks and meetings to discuss issues and concerns regarding ICTs and the new "information society".

León, Burch and Tamayo argue, for example, for the need for alternative research:

"The technological orientation, prevalent in the spheres of power, has considered technological innovations as the first cause of social change, leaving aside the social dynamics the consequences of technological developments are not however

³ "Information Society" is an ambiguous term with a strong ideological connotation. Although, it has been used to characterize the new contemporary society, as a new historical phase, this term continues to be considered primarily within a techno-determinism perspective of hegemonic power without any consideration of other social dynamics of change.

favorable for all humanity, particularly, as we know, the 'third world' We need to look at other issues that respect cultural, ethnic, regional and linguistic diversities; human rights and sustainable development as central axes; and also principles of transparency, participation, economic and social justice, genre equity and cultural and regional perspectives ..."⁴.

This thesis is also concerned with issues of ICT-dissemination and appropriation within Latin America and, as a specific case study, ICTs in Ecuador. My general research aim is to isolate what contextual aspects need to be considered to understand how ICTs may support democratic and social processes in Ecuador. I argue that it is not possible to understand ICT-appropriation without looking at these specific contextual features.

I begin by looking at some general trends through which ICTs and the so-called "information society" have been studied. These general trends, however, will be complemented within the context, theory and practical activities of Latin America.

I utilize therefore as my theoretical framework predominately Latin American social, economic, cultural studies as well as theoretical social approaches to ICTs. There are within ICT approaches in Latin America perspectives that combine conceptual frameworks with specific practical ICT issues. This practical understanding will be important for this thesis because they reflect some of the limitations and challenges of ICT-appropriation that appear also in my case studies.

My motivation behind this study is to shed light on an area that is not fully understood or documented in Ecuador and attempt to give some analytical responses to how ICT-appropriation is taking place within differing economic, social and cultural contexts within the country.

1.2. METHODOLOGY

In this study, I consider ICT-adoption and appropriation in three main areas: government (e-Government), education (e-Learning) and non-profit organizations within civil society (Networking). I chose these areas principally as in recent years ICT-appropriation in Ecuador has

⁴ León, Osvaldo, Burch, Sally, and Tamayo, Eduardo. "Se cayó el sistema": Enredos de la Sociedad de la Información. Agencia Latinoamericana de Información (ALAI). Quito. 2004. p: 11,12,18. All translations from Spanish are by the author of this thesis unless otherwise stated.

been taking place predominately within these sectors (in addition to industry which I have not considered). These sectors are particularly important for issues of democracy and social change.

I have selected 14 case studies within these three areas. Some of them are new projects and others have been running for a number of years. The case studies are:

e-Government

National initiatives

- National Agenda for Connectivity (NAC) program.
- Web-site of the current national Ecuadorian government part of the initiative of the NAC program.
- The Ecuadorian Tax office Reform.
- Web-site of the Tax office.

Local initiatives

- Quito Digital program.
- Local municipality web-site.
- Cibernarium project of the Quito Digital program.

e-Learning

Formal education

- Edefuturo program.
- Virtual College.

Non-formal education

- Information and Communication Youth Center.
- Communitarian Telecentres.

Networking

- International Mangrove-Network.
- Mangrove ICTs.
- Infodesarrollo.ec-Network.

I begin analyzing the cases within the government sector because many of the ICT issues raised here are relevant to the other sectors. The government sector is also important to understand due

to the policy issues (or lack thereof) that affect the other sectors. Tied to policy are issues of government financing of education and rural communities.

Through a series of questions and perspectives each case within these three areas has been approached combining conceptual and practical concerns looking at the particularities of each case. These have been divided as follows:

Background to the project: The background includes the contextual and ICT features through which the case studies have been created as well as issues of sustainability - how and why it has been possible to carry out the project. I lay out here the characteristics of the project, how it has been created and who are the social actors involved in the creation of the project.

Assumptions: I ask - what are the underlying assumptions about ICTs that have affected the ways in which they have been implemented? These assumptions are varied - from perceptions of technology as drivers of change themselves to concepts of a future with global access and ICT equity. At times they are anchored in an understanding of technology and change as a process rather than an end unto itself.

Limitations: What are the factors inhibiting successful ICT-appropriation or implementation? These limitations range from issues of access, training, political decision, social gaps and financing, to misconceptions of the underlying principles of, for example, e-Government.

Solutions: What solutions have been sought to work around inherent limitations? Which social actors have been involved in these solutions? Some of the case studies have found favorable solutions to limitations. These are important to consider in order to determine some of the inherent possibilities that ICTs offer to these three sectors (e-government, e-learning and civil society). (In some of the cases I have included the solutions into the individual limitation headings.)

Conclusions: What are the main highlights of each case study? These conclusions show some practical and theoretical concerns not only in relation to the case study, but also in relation to some of the theoretical concerns presented in Chapter 3.

I have carried out a series of interviews with the people involved in each case study. I have compiled and considered documents and newspaper articles in order to understand the expectations and the reception of ICT initiatives. I have personally observed all the active initiatives over a number of days. I have participated, as well, in one of the local e-Government initiatives called Cibernarium in the development of video interviews related with people in urban and rural areas that work with ICTs. As part of this I attach a DVD with these short video documentaries.

1.3. THE STRUCTURE OF THIS THESIS

I have divided this thesis into ten chapters. After this introductory chapter, Chapters 2 and 3 develop the theoretical framework and offer essential background information. Chapters 5 to 9 are the case studies. Chapter 10 is the conclusion looking also for ways forward.

This chapter is divided into three sections – a short introduction, the methodology of the case studies and this outline of chapters. The last section of this chapter considers some of the characteristics and arguments that a variety of theoreticians have used to shape the terms: Information and Communication Technologies (ICTs), e-Government, e-Learning and Networking.

To jump ahead somewhat, in short, I consider **Information and Communication Technologies (ICTs)** to refer to a set of technologies that permit the exchange and transmission of information (data) by different digital means.

e-Government is seen as the attempts made by governments to promote ICT- appropriation, not only within government institutions, but also within societies. In ideal terms, e-Government includes the view that ICTs need to be seen in a broader perspective of internal change in public management. e-Government is seen, by many, as a step towards e-Democracy. e-Democracy is, again ideally, the situation in which citizens, firms, civil organizations and governments are all involved in the process of building e-Government or carry out other activities that increase

information retrieval and dissemination in such a way that allows greater participation in political processes – in other words – that lead to a more democratic society.

e-Learning approaches see ICT-appropriation not only as the adoption of electronic media in a learning scenario but consider also a number of internal and external features within a broader “learning community”. This approach suggests as well a need to look at e-Learning within alternate types of education, including on-line and non-formal.

Networking, in this thesis, involves a focus on ICTs and society including the appearance of new social actors through social movements and organizations working with ICTs. ICTs within parts of civil society have been seen as important tools that are opening new active channels for information and communication that in turn may promote better and more democratic participation within the public sphere through the creation of networks.

Chapter 2 includes the first part of my general theoretical framework. I explore some U.S. and European perspectives and characteristics of how the “information society” has been shaped and analyzed. Analytically, based predominately on Frank Webster’s division⁵, the set of definitions are: technological, economic, occupational, spatial, cultural and political. These perspectives are obviously interrelated but Webster argues, and I am following him in this, that they represent some of the major trends of ICT studies.

These issues can be seen to offer a general approach to ICT-appropriation. This means that they will need to be explored and expanded to be useful within the Latin America ICT context.

Chapter 3 is the second part of my theoretical framework. Here, I present Latin American research with an emphasis on social approaches to ICTs. I pick up also here the six areas of ICT-research discussed in the previous chapter but they are subsumed under different headings.

This chapter is divided into four sections: the first section is this introduction and outline of the chapter. The second section focuses on early economic, cultural and social Latin American theories on “dependency models” and describes briefly the historical economic and social context

⁵ Webster, Frank. Theories of the Information Society. Routledge. UK. 1995. p: 6.

of Latin America from the 60s to the 90s as a backdrop to the early theories. The third section covers Latin America social approaches to ICTs. And the fourth section includes the conclusions about my approach.

Chapter 4 offers a brief historical and economic background of Ecuador. It outlines different socio-economic factors which inhibit Ecuador and its capacity to take advantage of the opportunities offered by ICTs. Although, in Chapter 3, I explore the historical and economic background of Latin America which includes Ecuador, this chapter takes up aspects specifically and in greater depth about Ecuador that need to be taken in consideration in the later analyses. I explore the Ecuadorian context and the main features of the economic and political crisis that Ecuador has confronted from the 1990s. I offer also a brief history of the development of ICTs and some of the general barriers to ICT-appropriation in Ecuador.

The Ecuadorian case studies on e-Government, e-Learning and civil society organizations make up Chapters 5 to 9.

Chapter 5 focuses on national e-Government initiatives in Ecuador. This chapter is divided into five sections.

This first section is the introduction, the approach and the outline of this chapter. The second section explores the first case study of the *National Agenda for Connectivity (NAC)* - the national central e-Government program formulated by the State. I have chosen this case as it lays out attempts at creating a national policy for ICTs in Ecuador. As such it gives added background to a number of issues and limitations that will arise again in other cases and sectors.

The third section focuses on a national e-Government initiative: The Ecuadorian *Tax office Reform (Servicio de Rentas Internas - SRI* in Spanish). This case is chosen as it highlights the possible effect of ICTs on the internal public organization in an Ecuadorian institution when ICTs are seen as part of a broader process of change rather than as isolated drivers. This initiative has been successful with regards to increasing the channels of interaction and participation between the institution and its citizens. This particular case, I will argue, shows that ICT-adoption is not sufficient in itself to change public management. It was necessary to change also the

management system and mind-set in order to reach positive results. In this case, I have explored *limitations* before the public institution was changed and the *solutions* that they have implemented when the institution has changed.

The fourth section focuses on the web-site of the *SRJ* institution - a central initiative carried out within this institution. This web-site shows how ICTs as tools for disseminating information and on-line services are helpful in order to offer better services to citizens, although not all Ecuadorians have access to the Internet. It shows up as well, I argue, the possibility for ICTs as tools for a better and more transparent governing system.

The fifth section considers a second web-site - that of the current national Ecuadorian government: *www.presidencia.gov.ec*. This case has been chosen as it raises issues of information versus dialogue and interactivity. The creation of a public government web-site for disseminating information, I argue, must be expanded to permit a real dialogue between governments and citizens in order to overcome other limitations, such as political crisis and citizen dissatisfaction. This web-site only partially reaches that goal and shows up the need for a more thorough understanding of e-Governance.

Chapter 6 continues the focus on e-Government but looks at local rather than national initiatives. The chapter is also divided into five sections.

The first section is the introduction and outline of this chapter. The second section considers the local e-Government program called *Quito Digital* which has been developed to incorporate some previous municipal projects as well as adding new ones. This program, although it has developed some goals and objectives in order to incorporate ICT within the institution and the city of Quito, is still only on "paper" in the sense that there is not a dedicated working group in charge of it. This situation brings into consideration new issues such as internal coordination, strategic alliances, and cooperation. Moreover, it sets new concerns about the role that local governments have within a society that is in crisis, where there is a need to look at citizens as the main actors and generators of change.

The third section explores the local municipality web-site: *www.quito.gov.ec*: the first initiative of ICT implementation that compiled and disseminated information related with local government. This web-site offers, as well, on-line services in order to improve proceedings within selected municipality offices in order to offer better services to citizens. This initiative aims to promote a more efficient and effective local government reducing bureaucratic proceedings and making governmental services more transparent.

The fourth section focuses on a further project of the *Quito Digital* program called *Cibernarium*. This is the first ICT program related with the diffusion and digital training for "all" citizens. This program is being developed with external cooperation of the @lis program of the European Union. This project, based on the Cibernarium project of Barcelona, focuses on mechanisms of ICT motivation through videos, panels of discussions, and programs. I argue that this project points out the need to develop local strategies that may take advantage of "foreign" projects adapting it to a local reality.

The fifth section offers, as conclusions for Chapter 5 and 6, some considerations that need to be taken into account to further practice and theory in the area of e-Government.

Chapter 7 focuses on ICT and formal education and has been divided into four sections.

The first section is the introduction, approach and outline of the chapter. The second section explores the history and context of ICT-appropriation within education in Ecuador, describing some of the available data in relation to literacy levels, infrastructure, teacher salaries, and economic resources. This section, as a background for the next e-Learning case studies, points out again the need to look at contextual features that can be determinants in order to carry out an analysis or a practical project of e-Learning.

The third section considers the *Edufuturo* case which has been the first educative program to promote ICT-use and appropriation in the rural and urban public primary schools in the province of Pichincha (Quito and its surroundings) developed by the local government of the province. *Edufuturo's* main goal has been to incorporate ICTs within public schools. It raises, however, other internal and external concerns that suggest the need to look at educative reforms within the

entire Ecuadorian educative system and internally within schools with teachers, directors and parents. It suggests also that if technology is to change learning spaces and reinforce learned knowledge, there is a need for a broader understanding that concerns as well the whole learning community.

The fourth section focuses on the *Virtual College* which is the first web-based learning project at the secondary level in Ecuador. This project focuses on the need to incorporate disadvantaged people who, for different economic and social reasons, haven't been able to study or to complete their secondary education. This case, I argue, suggests that technology can be a way to improve educative systems but again there are limitations, including issues of use of licensed versus "free software" and alliances between organizations.

Chapter 8 is concerned with non-formal education and is divided also into four sections.

The first section is the introduction and outline of this chapter. The second section presents the *Information and Communication Youth Center (CICJ* in Spanish) case, which is part of the program "Working Boy" (Muchacho Trabajador) sponsored by the Central Bank of Ecuador. These centers have been created for young people between 15 and 20 years and they offer workshops in basic and advanced informatics, citizen formation and alternative communication workshops on photography, radio, and video. This case discusses the importance of non-formal education spaces for young people to make them feel more confident to be part of a learning process without being in a college. ICTs, in this space, have been seen a "hook" for a broader educative proposal where citizen formation and processes of participation are more important in order to revalue their status as young citizens within the society.

The third section focuses on the *Communitarian Telecentres* situated in the kichwas communities of Chichico Rumi and Nuevo Paraíso in the Amazonian province of Napo. This project has been developed by the NGO Jatun Sacha⁶ with the financial support of the oil company Perenco. These telecentres offer computers and Internet connection and the NGO has developed an educative project with schools and young people in order to teach them how to use ICTs. These telecentres, as well, are offering services to people through the Internet. This case

⁶ More information: www.jatunsacha.org

offers the opportunity to consider whether telecentres are alternative spaces to incorporate disadvantaged communities in which technology is seen as a tool that can improve education and offer new knowledge that can help people to improve their lives. The *Telecentres* project goes beyond simple infrastructure technology and raises new issues in relation to social development, cultural factors and sustainability.

The fourth section offers conclusions to Chapters 7 and 8, including some of the practical and theoretical conclusions across the cases..

Chapter 9 shifts the focus to civil society organizations and networking. This chapter is divided into six sections.

The first section is the introduction and outline of this chapter. The second section describes a brief history of social movements and civil society organizations in Ecuador and ICT-appropriation, not only as a background of the case studies, but to point out the importance that these groups are playing within the Ecuadorian society in order to reformulate political systems, social stability and democratic participation.

The third section considers the *International Mangrove-Network* (RedManglar Internacional in Spanish) which has the participation of several Latin American and international NGOs, and many grassroots organizations. In September 2003, the *National Coordinator for the Defense of the Mangrove Forest* (C-CONDEM in Spanish), in Ecuador, became the Executive Secretary of the *Network* for a period of two years. This case study points out that technology appropriation is not a central concern. In order to carry out information and communication strategies within the *Network*, however, ICTs are playing a fundamental role. The study of the network also suggests that networking and web-sites may lead to increase participation in the public sphere, but that participation is not necessarily equal within *Networks*.

The fourth section focuses on the pilot project called *Manglar ICT*. This project has the participation of two grassroots organizations from the Esmeraldas province: the *Fondo Ecuatoriano Populorum Progressio* (FEPP in Spanish) situated in Limones and the NGO *Foundation of Ecological Defense* (FUNDECOL in Spanish) situated in Muisne. It aims to

systematize a series of experiences by local communities with the support of ICTs to be shared within communities, with grassroots organizations and within the *Network* described above. This project suggests that ICTs, as tools, can be useful for grassroots organizations and people in order to share communitarian local experiences and thereby be part of broader public spheres and debates. It points out as well that by getting some ICT knowledge people from grassroots organizations can improve their work with communities.

The fifth section discusses the *Infodesarrollo.ec Network* which is made up of several non-governmental and governmental Ecuadorian and International organizations which work with ICT matters in different sectors. This *Network* is concerned principally with ICTs and has two main objectives. First, to share information, knowledge, methodologies and learned lessons about the use of ICTs. Second, to influence public policies in the use of ICTs in different sectors of the Ecuadorian society. The study of this project points out the need to develop different information and communication mechanisms that can guide the complex dynamic relationships between all the organizations acting within a *Network*. It suggests also that if a *Network* wants to deal with many aspects, in this case ICT issues, it is important to design a strategy that organize the work between members.

The sixth section sums up some practical and theoretical conclusions concerning the case studies of this chapter.

Chapter 10 are my conclusions bringing together the three areas of this study: government, education and civil society in order to determine some of the practical and theoretical implications that need to be considered in order to carry out both analysis of ICT-appropriation and the development of ICT projects or programs. I present, as well, some suggested ways forward and future perspectives.

1.4. DEFINITION OF TERMS

This section focuses on some of the characteristics and arguments that a variety of theoreticians have used in relation to the terms: Information and Communication Technologies (ICTs), e-Government, e-Learning, and Networking. I have considered it important to discuss

characteristics of these terms as they will be useful for the analysis of my case studies in later chapters.

1.4.1. Information and Communication Technologies (ICTs)

Roberto Roggiero argues that ICTs refer 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”⁷.

ICTs, in Van Dijk’s definition, can be seen as involving both on- and off-line applications:

“the combination of on-line and off-line applications of the new media, used both in traditional social environments fixed to a particular time and space and in on-line media environments bridging these dimensions, produces the structurally new characteristics of these media”⁸.

According to Jan Van Dijk also, the recent communications “revolution” signals an end to the distinction between media that are fixed in space and time and media that bridge these dimensions:

“The new media, after all, can be used for both purposes. Even though the purpose of bridging time and space is predominant, the new media can also be used in off-line environments, for example in consulting a CD-ROM. The new media are a combination of on-line and off-line media ... They are a combination of transmission links and artificial memories (filled with text, data, images and/or sounds) which can also be installed in

⁷ Cited in Bonilla, Marcelo and Cliche, Gilles (Eds.). *Internet and Society in Latin America and the Caribbean*. Southbound Penang. IDRC. Canada. 2004. p: 418.

⁸ Van Dijk, Jan. *The Network Society*. Sage Publications. London, UK. 1999. p: 7

separate devices. Therefore, the new media require a step outside the scheme of revolutions that bridge space and time which have described media history until now"⁹.

In the case studies considered in this thesis, ICTs are most commonly used as a combination of on-line and off-line applications which, in my opinion, is not a replacement of face-to-face communication by on-line mediated communication, but involves ideally an interplay between them.

In this thesis I use also the terms ICT-adoption or ICT-dissemination and ICT-appropriation. The first two terms, ICT-adoption or dissemination, refer primarily to the physical spread or existence of ICTs in the country or an organization. ICT-appropriation implies a more complex situation in which ICTs are often re-configured by the users for specific needs e.g. through the creation of new content or use of ICTs in ways other than expected by creators or providers. It involves, I argue, the ways in which different social sectors use technology to pursue values and strategic objectives: participation and expression, cooperation and collaboration, access, solidarity, democracy, information dissemination, etc.

1.4.2. e-Government

e-Government, defined broadly, is the use of ICTs to promote more efficient and effective governments in all their internal political processes and legal measures.

In Brazil, ex-president Fernando Henrique Cardoso argues that e- Government is related with the implementation of ICTs by public offices in order to reduce bureaucracy and improve governmental services:

“the revitalization of institutions of political expression and representation constitutes one of the most serious challenges facing the contemporary world. The goal is to use the Internet and other new technologies to strengthen democratic values, transparency, and communication between the government and its citizens. With ‘electronic government’, citizens will have access to an extraordinary amount of information and public services

⁹ Ibid.

on-line. This will not only reduce bureaucracy but will make it possible for society to improve its oversight of the government and the services that government provides"¹⁰.

Following Cardoso, e-Government could involve delivering services via the Internet, telephone, community centers (self-service or facilitated by others), wireless devices or other communication systems. In the analysis of my case studies, I focus on some governmental initiatives related with the creation and use of web-sites as ways to improve and change the communication between governments and citizens.

Another characteristic of e-Government is, as well, not only the participation of the State and the public institutions, but also the private sector, organizations from civil society and citizens in general. These actors, essential pieces in the construction of the e-Government process, I will argue, are opening new channels for democratic participation through ICT-appropriation.

The perspective of 'services for citizens' has allowed the creation of "virtual communities" (geographically bounded and dispersed), which can be connected and well informed on-line. Ideally, it permits a better dialogue with governments in their democratic decisions. This characteristic will be important to consider in this thesis as some Ecuadorian governmental institutions, which have adopted on-line services to improve public management, have assumed that this incorporation also contributes to improve democracy though they provide limited avenues for dialogue between citizens and government.

The UN's *The Final Report of the Digital Opportunity Initiative* also describes e-Government as a process towards transparency and participation:

"ICT can contribute to fostering empowerment and participation and make government processes more efficient and transparent by encouraging communication and information-sharing among people and organizations, and within government. Using ICT, governments can improve the quality and responsiveness of the services they provide to

¹⁰ Cardoso, Fernando Henrique (ex - president of Brazil). Journal of Democracy. Article: [Democracy as a Starting Point](http://muse.jhu.edu/journals/journal_of_democracy/toc/jod12.1.html). National Endowment for Democracy and the Johns Hopkins University Press. January 2001. Available at: http://muse.jhu.edu/journals/journal_of_democracy/toc/jod12.1.html

their citizens as well as expand the reach and accessibility of services and public infrastructure”¹¹.

Within the e-Government case studies, it will be relevant to look at this characteristic of transparency and participation. The case of the *SRI Tax Office*, for example, is beginning to empower people and eliminate the traditional ad hoc way of reporting and return through the use of Internet and on-line services.

e-Government is not, however, a shortcut to economic development, budget savings or clean, efficient government. As the project *Roadmap for e-Government in the Developing World*¹² has indicated, e-Government is not the ‘Big Bang’, a single event that immediately and forever alters the universe of government. e-Government is rather a process – call it ‘*e-revolution*’ – and often a struggle that presents costs and risks both financial and political.

Hassan Bramwell, one of the assessors in the Ecuadorian e-Government initiative, argues that the implementation of e-Government in Ecuador differ from initiatives in other countries:

“e-Government in Ecuador is totally different compared with United States and other e-Governments, in the way that there are serious problems to resolve in relation to connection, the quality of equipment and the understanding of political management there are a lot of resolutions, risks and costs to take in order to implement e-Government in Ecuador”¹³.

The incorporation of e-Government may lead under the right circumstances, to a new and efficient horizontal and transparent model of public state’s administration:

“The use of ICTs creates pressure for governments to rethink traditional administrations: the pyramidal structure inherited from paper-based practices, localized contact, and a culture of hoarding information is being transformed by the establishment of network relations. ICT not only makes it easier to share information and participate in decision-

¹¹ Accenture, Markle Foundation, United Nations Development Programme. Creating a Development Dynamic: Final Report of the Digital Opportunity Initiative. July 2001. p. 16. Available at: <http://www.markle.org/news/DigitalOpportunityInitiativeFinalReport.pdf>

¹² Ibid.

¹³ Conectados Magazine. Article: Gobierno Electrónico: lo posible y lo deseable. No. 20. Ecuador. February 2002.

making, but it also makes it more difficult to monopolize information, to centralize decision-making and to reinforce hierarchies. As a result, e-Government both provokes the need for reform and is, in itself, a way to reinvent traditional structures and procedures”¹⁴.

Such change, however, requires both political will and real understanding of inherent possibilities. E-Government may under the right conditions lead to a new and transparent model of public administration which implies a rethink of traditional administrations, but it remains important to look at specific characteristics of governments as they are embedded within differing political and democratic contexts. It is important also not only to focus on the analysis of ICT implementation within governmental institutions, but also on other aspects of public management, and the specificities of the political and social crisis that countries like Ecuador have confronted in recent years.

1.4.3. e-Learning

In Rosenberg’s definition e-Learning takes place when the whole process of learning, teaching and organization has been migrated into the digital environment.

“e-Learning refers to the use of Internet technologies to deliver a broad array of solutions that enhance knowledge and performance. It is based on three fundamental criteria: 1. e-Learning is networked, which makes it capable of instant updating, storage/retrieval, distribution and sharing of instruction or information 2. It is delivered to the end-user via computer using standard Internet technology 3. It focuses on the broadest view of learning-learning solutions that go beyond the traditional paradigms of training”¹⁵.

For many authors the adoption of electronic media in a learning scenario is already sufficient to constitute e-Learning. Similar to e-Government, the simple addition of technology, I will argue however, is insufficient to cover all the processes involved.

¹⁴ Third Global Forum: Fostering Democracy and Development Through e-Government. Naples. 15-17 March 2001. Available at: www.globalforum.it/htm/frame/inglese/inglese.htm

¹⁵ Rosenberg, Marc J. E-Learning: Strategies for Delivering Knowledge in the Digital Age. McGraw-Hill. USA. 2000. p: 28, 29.

In contrast to Rosenberg's definition, other authors argue that e-Learning is the aggregation of all kinds of learning which use a computer and media to support the learning process but not necessarily migrate totally to digital environments. Tavangarian provides one such definition:

"We will call e-Learning all forms of electronic supported learning and teaching, which are procedural in character and aim to effect the construction of knowledge with reference to individual experience, practice and knowledge of the learner. Information and communication systems, whether networked or not, serve as specific media ... to implement the learning process"¹⁶.

Tavangarian argues that this definition of e-learning as a process rather than a technological process alone is based on the constructivist learning model:

"Knowledge is no artifact and thus cannot be conveyed to anyone. It must be constructed by the learner herself/himself. The paradigm of the moderate constructivism in which instruction and construction complement each other, seems to be especially appropriate for e-Learning"¹⁷.

Following Tavangarian's definitions, e-Learning is not only given within a digital environment but involves any ICT mechanism that supports constructivist learning processes within classes. This definition is more relevant for some of my case studies, where ICTs play a support-role in formal and non-formal education. I am not, however, going to analyze constructivist learning processes. Instead, I will examine some of the experiences that students have with technology; how they conceive it and use it.

Another approach to e-Learning according to Castells, suggests that e-Learning can be understood as localized through three forms:

¹⁶ Tavangarian, Djamshid. Is e-Learning the Solution for Individual Learning? Electronic Journal of E-Learning. Vol. 2. December, 2004. Available at: <http://www.ejel.org/volume-2/vol2-issue2/v2-i2-art4.htm>

¹⁷ Ibid.

- "Electronic learning in primary and secondary schools, which means the incorporation of electronic media to the class and a new pedagogical and educative organization by the use of the new media.
- The 'hybrid university' (on-line and off-line contexts).
- The 'virtual university', through a web-based platform"¹⁸.

e-Learning, in general, can then be understood as the incorporation of ICTs within education where the scenarios can be on-line, or off-line within a class, or a combination of both. I have considered e-Learning in this thesis as the incorporation of ICTs within on-line and off-line scenarios, where ICTs are tools that reinforce knowledge and learning processes.

This definition, however, needs to be complemented with other characteristics that not only refer to the use of ICT. For Tavangarian and others, however and as mentioned above, ICTs are only one element within e-Learning processes. There is a need to complement the narrow technological definition with a broader concept of e-Learning that involves the context in which education is taking place as well.

Goodnow, Córdova and Venegas argue, for example, that e-Learning processes take place not only within isolated on-line contexts but that off-line contexts are also determinants in how e-Learning proceeds. In this they also draw on Kendall:

"On-line interaction cannot be divorced from the off-line social and political contexts within which participants live their daily lives. Various aspects of these contexts enable and constrain the ability of participants, potential participants, and non-participants to learn about, access, and navigate on-line forums. Once on-line, participants draw from their off-line resources, as well as understandings gained in off-line experiences, to negotiate and interpret their on-line interaction"¹⁹.

This position suggests that teachers and students interact not only within on-line scenarios or with the support of ICTs, but also negotiate and are influenced by their own external contexts. This, in

¹⁸ Un-published lecture by Manuel Castells. Barcelona-Spain. February, 2004.

¹⁹ Kendall L. Cited by: Goodnow, Katherine, Córdova, Verónica and Venegas, Heidi. ICT and Multicultural Practice. Intermedia, University of Bergen. 2004. p: 15.

my opinion, influences as well the way in which teachers participate. I will explore these concerns, for example, in the case of the non-formal education project called *Information and Communication Youth Center* (Chapter 8), where young people have combined on-line and off-line experiences.

Torres also argues that e-Learning (or “education and ICTs”) need to be considered within a broader integral perspective of education. She proposes that ICTs are only one element of e-Learning. She explains this through the concept of *learning communities*:

“The learning community sometimes refers to the school context, and, more specifically, to the school or to the classroom; at others, to a geographical area (the city, the neighborhood, the locality); at others, to a virtual reality and to connectivity mediated by the use of modern information and communication technologies (networks of people, of schools, of educational institutions, of professional communities, etc)”²⁰.

Learning communities, in its different interpretations and focuses, have existed long before the advent of ICTs. Their ‘revival’ and expansion in the current context, according to Torres, can be explained by a series of factors, including:

- “The trend towards ‘glocalisation’ (globalization and its contrary impulse, localization) and, in this context, the resurgence/renewal of the local and so-called ‘community development’.
- The downsizing of the State and its role, and the rapid process of decentralization, along with the increasing complexity of civil society, the activation of alliances between different sectors and players, and the broadening of citizen participation in different fields, including education.
- The emergence and rapid expansion of the new Information and Communication Technologies (ICTs).
- The renewed importance given to education and the emphasis on learning, and on life-long learning as an organizing principle of future society –defined as a ‘knowledge society’ and a ‘learning society’.

²⁰ Torres, Rosa María. Learning Communities: Re-thinking Education through Local Development and Learning. Paper presented at the “International Symposium on Learning Communities”, Barcelona Forum 2004. p: 1.

- Growing recognition of diversity and of the need to diversify educational opportunities, tending towards innovation and experimentation with different models, sensitive to the reality and requirements of each particular situation.
- Disenchantment with the school system and with the repeated attempts at educational reform, and search for new ways and means of thinking about school education and about education in general ...²¹.

In summary, the *learning community* proposal integrates school and non-school education, real and virtual resources, in a given community or territory (urban and/or rural). *Learning community* implies also a series of distinctions between school and community, and between formal, non-formal and informal education, and the conventional ways of seeing the links between them.

Torres' definition, which embraces several elements and people within the educative system, corroborates the need to look at other aspects than simply the technological ones within formal and non-formal education. As Torres argues, the use of ICTs are only one of the aspects of *learning communities*.

A final characteristic relevant to this study, that shapes the concept of *learning community*, according to Dawes, can be seen not only in the relation between teachers and learners, but in a complex variety of key factors or *barriers* within schools, classrooms and communities where problems arise when teachers are expected to implement changes in what may well be adverse circumstances.

Some of these barriers are related with:

- " - Ownership of up-to-date technology
- A sense of purpose for ICT use
- Adequate training
- Realistic time management
- Inclusion in a supportive community of practice"²².

²¹ Ibid. p: 2.

²² Dawes, Lyn. What Stops Teachers Using New Technology? In: Leask, Marilyn (Ed). Issues in Teaching Using ICT. Routledge. UK. 2001. p: 66.

I consider these barriers important to analyze within my case studies because they show some of the limitations and misconceptions that inhibit successful ICT-appropriation within educative spaces. Dawes writes about industrialized countries. In Ecuador the barriers are often quite complex. Exploring some of these limitations helps determine some general and specific aspects that complement a general view about ICT-appropriation within education.

1.4.4. Networking

The concept of networking that I will use in this thesis focuses on ICT and civil society. It is related also to the appearance and organization of new social actors through social movements and organizations within civil society. ICTs, I will argue, have become important tools that are opening new active channels for information and communication that in turn *may* promote a better and more democratic participation within the public sphere. This situation has been described as involving “virtual networks”.

In this section, in order to find some relevant characteristics to the term “networking”, I begin explaining the concept of “network”. In the second part of this section, I will focus on some relevant characteristics of civil society, new stakeholders and social movements as social actors that have been using ICTs to create national and international networks of communication and information. In presenting these sections, I will explain, as well, how and why some of these concerns are relevant for my study.

1.4.4.1. Network

According to Castells, new information technologies were crucial for many countries and industries as part of economic transition. He emphasizes, however, the fact that technologies did not become significant by themselves but as solutions to problems of capitalist accumulation in quite specific economic situations.²³

Castells points out some of the most important elements of this analysis, including transformations of traditional interactions into a new social structure, manifested under various

²³ Castells, Manuel. The Information Age: Economy, Society and Culture. Vol 1: The Rise of the Network Society. Blackwell Publishers. UK. 2000. Second Edition

forms depending on the diversity of cultures and institutions they appear in. Castells refers to this as “networks”:

“For the first time in history, the basic unit of economic organization is not a subject, be it individual (such as the entrepreneur or the entrepreneurial family) or collective (such as the capitalist class, the corporation, the state). As I have tried to show, the unit is the network, made up of a variety of subjects and organizations, relentlessly modified as networks adapt to supportive environments and market structures”²⁴.

He argues further that networks change processes:

“Networks constitute the new social morphology of our societies, and the diffusion of networking logic substantially modifies the operation and outcomes in processes of production, experience, power, and culture. While the networking form of social organization has existed in other times and spaces, the new information technology paradigm provides the material basis for its pervasive expansion throughout the entire social structure”²⁵.

Jan Van Dijk, who considers Castell’s Network Society arguments as a key work to interpret the present communication revolution, also argues for the pivotal role of “networks”:

“... we can call the twenty-first century the age of networks. Networks will be the nervous system of our future society, and we can expect this infrastructure to have more influence on our entire social and personal lives than did the construction of roads for the transportation of goods and people in the past”²⁶.

Considering that the network plays a central role in the characterization of the new “information society”, it is important for Castells to define what it is:

²⁴ Ibid. p: 198.

²⁵ Ibid. p: 500.

²⁶ Van Dijk, Jan (1999). Op. cit. p: 2.

"A network is a set of interconnected nodes. A node is the point in which a curve intersects with itself. What a node is, concretely speaking, depends on the kind of concrete networks of which we speak Networks are open structures, able to expand without limits, integrating new nodes as long as they are able to communicate within the network, namely as long as they share the same communication codes (for example, values or performance goals). A network-based social structure is a highly dynamic, open system, susceptible to innovating without threatening its balance"²⁷.

Van Dijk argues that networks are conformed by different users. We need to consider then the relation of users and their context, which also determines their needs and purposes within "networks":

"... the basic elements of the *network society* are not so much networks themselves but individuals, households, groups and organizations linked by these networks. Increasingly they shape the form of the organization, rather than the content of modern society ... The growing importance of networks for modern society is expressed in the spread of both social and media networks supporting each other"²⁸.

New ICTs, especially the Internet, have given a new impulse in the expansion of networks. An example of this is the new forms of communication, as Castells refers to above, which are arising through extremely complex social and communicative infrastructures and relations (so-called "virtual communities"). These are supporting face-to-face communication, according to Castells, with mediated communication, where people are not tied to the same particular time, place and other physical conditions.

In Chapter 9, I have chosen to focus particularly on civil society organizations because they are creating important social and virtual networks within the Ecuadorian society that have allowed them to express their opinion within national and international scenarios and which has had some repercussion within public decisions.

²⁷ Castells, Manuel (2000). Op. cit. p: 501-2.

²⁸ Van Dijk, Jan (1999). Op. cit. p: 24.

As Castells argues the conformation of “virtual networks” have changed social processes and forms of organizations, thus, I will analyze how and why these organizations are carrying out their work as networks and how these groups are influencing Ecuadorian democracy and social development.

In order to define what I call “civil society” and “new stakeholders”, in the next section, I offer some characteristics of civil society in general. I discuss also how and why new stakeholders, social movements and civil society organizations have appeared as a consequence of a lack of representation from the State (I expand on this in the chapters to follow).

1.4.4.2. Civil society, new stakeholders and social movements

Chandoke argues that civil society is indispensable for democracy in the sense that it is conformed by people who have the right to participate, discuss and enter into a democratic dialogue:

“Society can be conceived of as the entirety of social practices in a polity. Civil society can be seen as that part of society where people, as rights-bearing citizens, meet to discuss and enter into dialogue about the polity. It is in this sense that civil society is absolutely indispensable for democracy, in its promise of an engaged citizenry”²⁹.

Chandhoke argues further that:

“the failure of political parties, and the crisis of representation it creates, does not result in the disappearance of the activity we call politics. Instead, political practices look for other channels”³⁰.

León, Burch and Tamayo suggest, in relation to the previous characteristics, that the conception of civil society and new stakeholders can be exemplified by considering the political and

²⁹ Chandhoke, Neera. Article: [What the Hell is “Civil Society”?](http://www.opendemocracy.net/debates/article-3-122-2375.jsp). March, 2005. p: 5. Available at: <http://www.opendemocracy.net/debates/article-3-122-2375.jsp>

³⁰ Ibid. p: 6.

economic aspects of the Latin American context during recent years (which coincide with the crisis of the role of the State that is taking place in the region).

“... neoliberal policy has led the State to leave almost every human activity to the market. This has thrown political parties into a profound crisis, largely due to corruption: the social sphere is fragmented, but not altogether gone. The vacuum created is being occupied by a broad range of civil society organizations, which network and prepare the economic, political and democratic projects and proposals that challenge dominant thought”³¹.

This new role of the State, weakened by political corruption and instability, and the fragmentation of the social space due to the devastating socio-economic crisis that generated violence and civil wars, has led to new stakeholders (social movements, civil society, NGOs, academicians, women’s associations, indigenous associations) appearing within societies and developing new mechanisms of participation and actuation in society.

León, Burch and Tamayo argue furthermore that civil society organizations are creating a new organizational structure with common denominators. This is done due to:

“recognition of the constraints of each organization’s or entity’s specific field of action and, therefore, the need to associate with other like-minded partners, under shared values, to enhance impact and scope”³².

According to León, Burch and Tamayo, the term “networking” among other societal collectives refers to a:

“diverse assortment of networks, ranging from those who simply use the name ... to nizational paradigm ... and including others who find themselves networking due to the methodological requirements of their work”³³.

³¹ León, Osvaldo; Burch, Sally and Tamayo, Eduardo (2001). Op. cit. p: 70.

³² Ibid.

³³ Ibid.

Castells, as well, adds some important characteristics to what he calls “networked social movements”. I sum up some of his concerns:

- “Cultural movements (in the sense of movements aimed at defending or proposing specific ways of life and meaning) are built around communication systems – essentially the Internet and the media - because they are the main way in which these movements can reach out to those who would adhere to their values, and from there to affect the consciousness of society as whole
- The Internet becomes an essential medium of expression and organization for these kinds of manifestations, which coincide in a given time and space, make their impact through the media world, and act upon institutions and organizations ... by the repercussions of their impact on public opinion
- The most influential social movements are, at the same time, rooted in their local context and aim at a global impact. They need the legitimacy and support provided by their reliance on local groups
- The Internet provides the material basis for these movements to engage in the production of a new society. By so doing, they transform the Internet as well: from organizational business tools and communication medium, it becomes a lever of social transformation as well – although not always in the terms sought by the social movements or, for that matter, in defense of the values that you and me would necessarily share”³⁴.

Civil society in the form of new stakeholders and new social groups have found it useful and important to incorporate and use ICTs as alternative communicative ways that allow them not only the possibility to communicate their concerns, but also to be better informed. In Ecuador, for example, the Internet began to be used predominately by some civil society organizations which, under an unfavorable political and social context, found it a useful and important way to express their opinions and represent themselves.

³⁴ Castells, Manuel. The Internet Galaxy: Reflections on the Internet, Business, and Society. Oxford University Press. UK. 2001. p: 140-143.

On the basis of this, the role that civil society has played in the incorporation and conceptualization of ICTs has been determinant in ICT social approaches. This is an important reason why I have extended the analysis to networking in civil society.

There are a broad range of characteristics and arguments about e-Government, e-Learning and Networking. I have chosen, however, the characteristics that have to a large extent shaped these concepts, and that are useful for the future analysis of my case studies. In these case studies, I use an understanding of terms in the light of a continuous need to explore elements beyond the simple technological point of view. I assume that a project, initiative or program within e-Government, e-Learning and Networking not only involves technology implementation, but a series of other elements that are shaped within the dynamic of a specific context.

In the next two chapters (2 and 3), I will present the theoretical framework as a backdrop of my case studies. Although I have tried to argue how and why these relevant characteristics are useful when we attempt to carry out an analysis on ICTs within these three areas, the theoretical framework is developed for a specific context that is Latin America and more specifically Ecuador.

CHAPTER TWO

THEORETICAL FRAMEWORK – PART ONE

2.1. INTRODUCTION

In the following two chapters (2 and 3), I present the theoretical framework that informs this thesis.

This chapter explores a selection of US and European perspectives on ICTs and the development of the “information society”. Based predominately on Frank Webster’s³⁵ division, the set I will use are: technological, economic, occupational, spatial, cultural and political perspectives. Obviously these perspectives are interrelated but they represent, Webster argues and I follow him in this for this chapter, some of the major trends of ICT studies.

I present the set of definitions looking particularly for relevant issues for this study as raised by selected central theoreticians. These issues can be seen to offer a general approach to the analysis of ICTs in society. I argue, however, that they will need to be explored and expanded to be useful within the Latin American ICT context. An expansion that is done in Chapter 3.

This chapter is divided into six sections.

In the first section (2.2.1.), I present a technological perspective which has been the most common definition to characterize the “information society” because the advent of technology has been assumed by many theoreticians as the most important change in recent years. This perspective, in my opinion, has formed as well the techno-optimist idea that technology will lead to “development”. In the second section (2.2.2.), I focus on economic perspectives which seek to establish measures of the information society in economic terms. Many economists have argued that technological transformation is the main driving force behind a new long wave of fast economic growth that would continue for decades in advanced industrial societies. I argue,

³⁵ Webster, Frank. Theories of the Information Society. Routledge. UK. 1995. p. 6.

however, that Latin America has experienced differing historical economic contexts that have influenced ICT-dissemination and appropriation.

In the third section (2.2.3.), I present an occupational perspective which is related, principally, with the changes in occupations due to the advent of technology within industry. Occupational perspectives, however, can be explored within other sectors of the society. In this set of case studies in Ecuador, I will utilize this approach by looking at e-Government case studies and how “modernization” reforms incorporating technologies have changed occupational structures. In the fourth section (2.2.4.), I present a spatial perspective which is changing the way in which people communicate, inform and make relations. This trend, however, brings into consideration the need to look at who, how and why some people are able to utilize ICTs and why other people are still excluded from such possibility. This idea points to the need to look at all the barriers that make ICT-appropriation difficult for some groups.

In the fifth section (2.2.5.), I lay out cultural perspectives which have been most evident in the 1990s in order to define how technology changes and affect cultural aspects. Some contemporary views³⁶ have considered the “culture of real virtuality” as a new way of symbolic representation. This perspective complements and goes beyond technological and economic perspectives, considering, as well, cultural and social features that affect or contribute to ICT-appropriation. Finally in the sixth section (2.2.6.), I focus on political perspectives which are related with issues of power, political systems, freedom, control, the public sphere and democracy. I find this perspective useful because ICTs under some circumstances affect and change the functioning of a democracy and a focus on national policy and global economics are fundamental to the ways in which ICTs have been adopted in Ecuador.

³⁶ Such as Manuel Castells and Jan Van Dijk.

2.2. US AND EUROPEAN PERSPECTIVES

2.2.1. Technological Information Society

“The most common definition of the ‘information society’ emphasizes technological innovation”³⁷.

The term “information society” was initially taken in use in the social scientific literature during the late 1970s and early 1980s when a new technological “paradigm”, organized around information technology, came to be constituted, predominantly in the United States.

The notion of the information society as a technological concept came about in the 1970s, Webster argues, as an historical coincidence. The main idea was that a major technological breakthrough – the so-called microelectronics revolution – created major social and economic consequences in the advanced industrial societies:

“It was thought that the microelectronic technology would make it possible to develop new methods of flexible manufacturing, and also office work would be increasingly automatised. This was also a time when the first personal computers entered the markets, and it was expected that small microprocessors would soon be controlling processes e.g. in automobiles, households and in different kinds of ordinary consumer devices”³⁸.

This “technological revolution” brought about the start of a series of discussions. Heated debates emerged with theoretical contributions by the likes of Alvin Toffler³⁹, John Naisbitt⁴⁰, Michael Piore and Charles Sabel⁴¹, among others.

Alvin Toffler developed his analyses about “third wave societies” based on the impact on the home and work. This included the:

³⁷ Ibid. p. 6.

³⁸ Kasvio, Antti. ‘Information Society’ as a Theoretical Research Programme: Methodological Starting Points for Concrete Analysis. 2001. Available at: <http://www.info.uta.fi/winsoc/eng/lect/THEORY.htm>

³⁹ Toffler, Alvin. The Third Wave. Collins. USA. 1980.

⁴⁰ Naisbitt, John. Megatrends: Ten New Directions Transforming Our Lives. Futura. USA. 1984.

⁴¹ Piore, Michael and Sabel, Charles. The Second Industrial Divide. Basic Books. New York. 1984.

“impact of the ‘microelectronics revolution’ on the home, CNC (Computer Numerical Control) effects on production processes, or the tidal force of a ‘third wave’ of computers, telecommunications and biotechnology that announces ‘the death knell of industrialism and the rise of a new civilization’”⁴².

John Naisbitt theorized about the so-called “megatrends” that were, according to him, influencing the future development of advanced industrial societies. Michael Piore and Charles Sabel suggested, as well, that new technologies would provide the foundation for a radically different way of working - ‘flexible specialization’⁴³.

The technological concept of “information society”, however, was criticized amongst others by Webster, who put forward two well-founded objections. First, that it is based on the “astonishing vagueness of technology in most of the books”⁴⁴ and with problems also associated with the:

“measurement and the associated difficulty of stipulating the point on the technological scale at which a society is judged to have entered an ‘information age’”⁴⁵.

Secondly, objections were raised about the technologically determinist conceptions in which

“technology is regarded as the prime social dynamic - and as such an oversimplification of processes of change”⁴⁶.

Even though the technological perspective has been helpful to characterize the advent of ICTs and the so-called “information society”, I argue that it is not enough to reduce processes of change and development that ICTs generate only to technological advances and implementation. I assume that technology is only one aspect that needs to be considered in order to carry out an analysis of ICT-use and appropriation.

⁴² Toffler, Alvin. Cited by: Webster, Frank. Op. cit. p: 9

⁴³ Piore, Michael and Sabel, Charles. Op. cit.

⁴⁴ Webster, Frank (1995). Op. cit. p: 9.

⁴⁵ Ibid.

⁴⁶ Ibid. p: 10.

I consider, also, that the “technology revolution” within Latin America has had a different “logic of diffusion” and appropriation due to a different economic, social, cultural and political development. It is not possible to understand ICTs, thus, only through technologically determinist conceptions. There is a need to complement this first trend with more characteristics, arguments and contexts looking particularly at specific realities.

Within my study, I will analyze some case studies looking at, not only technology implementation, but all the features that affect an ICT-appropriation including: economic, social, cultural, and political elements. As well, I will focus on the participants and users of ICTs.

2.2.2. Economic Information Society

In the United States, the economic concept of the “information society” was also referred to as the “economics of information” which had its origins in Fritz Machlup’s pioneering work *The Production and Distribution of Knowledge in the United States*⁴⁷. He distinguished five broad industry groups (education, media of communication, information machines, information services, other information activities) to establish measures of the information society in economic terms.

Webster argues, however, that the best known study of the emergence of an “information economy” was developed by Marc Porat⁴⁸.

“Porat echoed much of Machlup’s approach in his reliance on governmental statistical sources to design a computer model on the US economy in the late 1960s, but divided the economy between the ‘primary’, ‘secondary’ and ‘non information’ sectors”⁴⁹.

Other versions are related with historical events including, at the beginning of the 90s, the new economic recession faced by advanced industrial countries. The crisis led to a significant increase in unemployment especially in Western Europe. These experiences opened extensive discussions among economists and decision-makers about interrelationships that prevail between economic growth, technological development and unemployment.

⁴⁷ Machlup, Fritz. *The Production and Distribution of Knowledge in the United States*. Princeton University Press. USA. 1962.

⁴⁸ Porat, Marc. *The Information Economy: Definition and Measurement*. Special publication. Washington, DC: US Department of Commerce, Office of Telecommunications. USA. 1977.

⁴⁹ Ibid. p: 11.

Kasvio describes these:

“Some analysts were worried about the fact that most of the technological innovations made during the 1980’s had been aimed towards the development of production processes rather than towards the invention of entirely new products. Such innovations make it possible to satisfy the existing demand with decreasing amounts of labour and other resources, whereas they do not lead to the creation of new demand. Therefore these kinds of innovations do not necessary have any significant positive impact on the rate of the economic growth and they don’t help create large amounts of new jobs either”⁵⁰.

Other analyses - such as the notion of the *technological paradigm*, elaborated by economists such as Carlotta Pérez⁵¹, Christopher Freeman and Giovanni Dosi⁵², among others - have helped to organize the essence of current technological transformation as the main driving force behind major growth.

This notion of the technological paradigm, “penetrated the core of life and mind”⁵³. Many of the issues were also discussed at high-level conferences organized by the OECD and in United States:

“In the year 1993 the American presidential team of Clinton and Gore acted as a catalyst to nascent policy perspectives on computers and networks, launching the idea of an information superhighway and a national information infrastructure”⁵⁴.

The building of information highways was adopted as a central policy objective in the EU *Growth, Competitiveness and Employment White Book* which was prepared by the initiative of Jacques Delors and published in December 1993⁵⁵.

⁵⁰ Kasvio, Antti (2001). Op. cit.

⁵¹ Pérez, Carlotta. *Structural Change and the Assimilation of New Technologies in the Economic and Social Systems*. Futures. 1983.

⁵² Freeman, Christopher; Dosi, Giovanni; Nelson, Richard; Silverberg, Gerald; and Soete, Luc. (Eds). *Technical Change and Economic Theory*. Pinter. London. 1988.

⁵³ Castells, Manuel. *The Information Age: Economy, Society and Culture. Vol 1: The Rise of the Network Society*. Blackwell Publishers. UK. 2000 (second edition). p: 65.

⁵⁴ Catinat, Michel. Cited by: Van Dijk, Jan. *The Network Society*. Sage Publications. London, UK. 1999. p: 224.

⁵⁵ EU Commission, 1993.

The economic perspective is useful within my study in a somewhat adjusted form. Adjusted because while technology has been able to support new economic models within advanced industrial societies, such as the United States, within Latin America, there are different concerns and processes of economic and social development. Latin America has been, for example, receiving technology in a "subordinate position" in relation to industrial societies, which are mostly the "owners" of technological advances, industry and business.

I argue that advanced industrial societies have "imposed" some of their perceptions and forms of the "information society". Imposed through marketing, through expected forms of adoption and analysis (OECD, WTO, World Bank etc.). These cannot necessarily be utilized within less developed countries, such as Latin American countries, without adaptation. While stakeholders in the United States, the "owner" or "host" of the so-called "information highway", has been able to discuss and develop economic growth in relation to technology advances, Latin America users, although in a "subordinate position", have sometimes been able to utilize technology for their own ends leading to different forms of growth. These types of alternative appropriation need to be considered in Latin America and elsewhere.

These concerns are related, however, with the barriers that technology use and access implies. On the basis of this, I will present in Chapter 3 some determinant contextual and conceptual features that characterize Latin American realities.

2.2.3. Occupational Information Society

Occupational analyses of the "information society" are related to the development of new and existing jobs and structures:

"the expansion of information-rich occupations, such as managerial, professional, and technical positions, as the core of the new occupational structure"⁵⁶.

⁵⁶ Castells, Manuel (2000). Op. cit. p: 206.

The occupational definition, however, is frequently combined with an economic measure. For example, Singelmann's conceptualization of the change of employment structures in various countries between 1920 and 1970 took into consideration categories of "service activities" for economic sectors.

This conceptualization was re-considered by Castells in the 1990s. In this reconsideration he explains from a sociological point of view that informational societies must be conceptualized also through their differences:

"... by assessing in a comparative framework the differences in the evolution of their employment structure as a fundamental indicator for both their commonality and their diversity"⁵⁷.

Another early trend of the occupational "information society" was the theory of post-industrialism⁵⁸.

The occupational trend has followed ideas about "modernity" and how technology was going to change employment structures contributing to the improvement of industries and therefore economies. I argue, however, that assumptions about "modernity" differ between countries, within countries and between social sectors.

The occupational trend in relation to technological reforms will be explored, in my analysis, within "modernization" processes in public institutions. "Modernization" reforms have been applied in many sectors of the Ecuadorian society, I will analyze some specific cases within e-Government (Chapter 5 and 6), in relation to technological implementation as an occupational trend.

2.2.4. Spatial Information Society

The spatial conception of the information society appears, amongst others, in Anthony Giddens' work of *The Consequences of Modernity*⁵⁹. Here Giddens points out that one of "modern societies" most important characteristics is the process of "time-space distantiation"⁶⁰.

⁵⁷ Ibid. p: 208.

⁵⁸ Bell, Daniel. *The Coming of Post-Industrial Society*. Basic Books. USA. 1973.

This conception of modern societies stretching further and further across time and space has its base in the idea that barriers of space are broken by the increasing reach of communication and transportation.

Jan Van Dijk uses this to suggest in his book *Network Society*⁶¹ that the “shrinking” of time-space is on the increase:

“The process of expansion, however, turns into its opposite: time and space are shrinking within those ever expanding borders we are dealing with a radicalization of the meaning of time and space, made possible by the improvement of means of transportation, information and communication”⁶².

Added together these trends emphasize the centrality of “information networks” which connect locations globally. The information network has been constituted as one of the major conceptual terms for many theorists, who have put emphasis on different technological, economic and social aspects in relation with the spatial conception.

Manuel Castells and Jan Van Dijk, among others, explain the way in which media are changing social relations through new flows of information in societies without any particular spatial condition. As Jan Van Dijk points out:

“The growing importance of networks for modern society is expressed in the spread of both social and media networks supporting each other. Face-to-face communication is replaced or supplemented by mediated communication ... The rise of ICT gives a new impulse to this multiplicity. For instance, forms of communication between interpersonal and mass communications arise, leading to so-called virtual communities virtual because here associations between people are not tied to the same particular time, place and other physical conditions”⁶³.

⁵⁹ Giddens, Anthony. *The Consequences of Modernity*. Polity Press. UK. 1990.

⁶⁰ Ibid.

⁶¹ Van Dijk, Jan. *The Network Society*. Sage Publications. London, UK. 1999.

⁶² Ibid. p: 20, 21.

⁶³ Ibid. p: 24-26.

ICTs, especially the Internet, have allowed, not only that people break barriers of space, but also communicate better, to have access to new information and become involved in new virtual networks of communication creating new social relations. I argue, however, that although ICTs have increased the ways to communicate breaking barriers, it is important to look at who, how and why some people are able to do this while other people are still excluded from such possibility. More information also does not necessarily lead to more global democratic information and communication.

This idea points out the need to look at all the barriers that make it difficult for ICT dissemination and appropriation. In Chapter 9, I will therefore analyze how and why non-profit civil society organizations have been able to implement ICTs within their organizations, and how they are breaking some barriers (e.g. spatial, infrastructure, social, cultural) changing the ways in which they communicate and inform through new ways of participation through virtual networks. The analysis of these case studies allow us to understand that although technology is breaking some barriers, there are other limitations that need to be considered.

2.2.5. Cultural Information Society

The cultural conception of the information society has been most evident in the 1990s. Castells outlines the idea as also “revolutionizing” our societies:

“The emergence of a new electronic communication systems characterized by its global reach, its integration of all communication media, and its potential interactivity is changing and will change our culture forever. However, the issue arises of the actual conditions, characteristics, and effects of such change”⁶⁴.

Cultural aspects regarding information in social circulation through “mass communication” is not new. The evolution of the mass media of communication toward globalization and

⁶⁴ Castells, Manuel (2000). Op. cit. p: 329.

decentralization was foreseen, for example, in the early 1960s by Marshall McLuhan's⁶⁵ theories about communication ("the media is the message").

These communication theories expound the relationship between the technology – the medium – cultural aspects and effects. There have been numerous approaches. Russell Neuman⁶⁶, among others, referred to the historical perspective of the media and Umberto Eco⁶⁷ provided an insightful perspective to interpret media effects.

In the 1990s, in sections of the world, the extent of the new multimedia systems of electronic communication reached many domains of life, from home to work, from schools to hospitals, from entertainment to travel. Not only does this have an organizational effect but also a cultural one, amongst others, as a new symbol of "hypermodernity".

Webster reinforces this idea pointing out that:

"Contemporary culture is manifestly more heavily information laden than any of its predecessors. We exist in a media-saturated environment, which means that life is quintessentially about symbolization, about exchanging and receiving – or trying to exchange and resisting reception - messages about ourselves and others. It is in acknowledgement of this explosion of *signification* that many writers conceive of our having entered an 'information society'"⁶⁸.

Some of the contemporary views consider, as Castells relates, the "culture of real virtuality" considering the reality as symbolic representation based also in Roland Barthes⁶⁹ and Jean Baudrillard's⁷⁰ works about the production and consumption of signs.

The cultural perspective in relation to ICTs is useful for this study because, as mentioned previously, there is a need to go beyond technology and economic perspectives considering also cultural and social features that affect or contribute to ICT-appropriation.

⁶⁵ McLuhan, Marshall. Understanding Media: The Extensions of Man. MacMillan. New York, USA. 1964.

⁶⁶ Neuman, Russell. The Future of Mass Audiences. Cambridge University Press. New York, USA. 1991.

⁶⁷ Eco, Umberto. Does the Audience have Bad effects on Television? In: Umberto Eco, Apocalypse Postponed. Indiana University Press. Bloomington, USA. 1977-1994.

⁶⁸ Webster, Frank. Op. cit. p. 22.

⁶⁹ Barthes, Roland. Leçon Inaugurale de la Chaire de Semiologie Litteraire du College de France. Seuil, Paris. 1978.

⁷⁰ Baudrillard, Jean. Pour une Critique de l'Economie Politique du Signe. Gallimard, Paris. 1972.

In Chapter 3, therefore, I will begin presenting some central arguments within Latin American cultural studies that have been important for Latin American social approaches to ICTs. Some of the main arguments of these studies point out the need to examine social practices looking particularly at popular culture, national identity and mass communication. They have had profound implications in Latin America for thinking through the relations between people, the national state and various forms of media (including now ICTs).

The impact of studies such as García Canclini's book *Hybrid Cultures*⁷¹ brought into consideration as well the need to study diverse intercultural interrelations, where the "hybrid" constitution of cultures interrelate the traditional and the modern, the educated, the popular and the mass.

I will present these cultural perspectives in Chapter 3 and later on particularly in Chapter 7 and 8 on e-Learning. Some of the projects about e-Learning point to the need to look at cultural aspects in order to develop digital contents that reinforce cultural and social features: identity formation, hybridization, symbolic representation and cultural pertinence.

2.2.6. Political Information Society

Finally, the concept of the "information society" is related with issues of power, political systems, freedom, control, public sphere and democracy.

One of the most valuable works related with the public sphere previous to the ICT "revolution" is Jürgen Habermas' *The Structural Transformation of the Public Sphere*⁷². He argues here that the key to a democratic public sphere is participation and open debate:

"From the premise that public opinion is to be formed in an arena of open debate, it follows that the effectiveness of all this will be profoundly shaped by the quality, availability and communication of information"⁷³.

⁷¹ García Canclini, Néstor. *Hybrid Cultures: Strategies for Entering and Leaving Modernity*. University of Minnesota Press. USA. 1995. (Spanish original version 1989).

⁷² Habermas, Jürgen. *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*. Cambridge: Polity. 1989.

Habermas' concept about the public sphere is useful also in ICT-research with its focus on changes in the informational realm, how it has been transformed, and in what direction it may be moving. It relates also to the use of information management by political parties and the State, and in contemporary discussions with issues about democracy and civil participation.

One of the contemporary contributions dealing with ICTs and political power is David Trend's work: *Cultural Democracy: Politics, Media, New Technology*⁷⁴.

The political perspective reinforces the idea that the uses of ICTs might affect and change the functioning of a democracy. Kenneth Hacker and Jan Van Dijk's book *Digital Democracy: Issues of Theory and Practice*⁷⁵ is one contribution to the contemporary perspective of politics and democracy in the information society in relation to the issues of electronic government (on-line services, new public management and citizen participation).

Many of the assumptions related with the implementation of ICTs suggest that they contribute to change or improve democracy and public spaces. I argue that ICTs, although they may contribute to political reforms improving democracy, there are many other contextual aspects in every situation that are impelling such actions in other directions. On the basis of this, every case study will need to be analyzed within its own context.

These perspectives have shown some of the important trends in which ICT-appropriation can be studied. They have pointed out some general issues to consider in order to carry out an analysis of ICT-dissemination and appropriation. These approaches, however, as I argue above, need to be applied, interpreted, understood and expanded within Latin American perspectives and realities.

In the next chapter, I will therefore focus on Latin American social approaches to ICTs and pick up also the six areas of ICT-research. These are, however, organized under different headings considering the particularities of the Latin American theory, practice and context.

⁷³ Ibid. p: 105.

⁷⁴ Trend, David. *Cultural Democracy: Politics, Media and New Technology*. New York Press. USA. 1997.

⁷⁵ Kenneth Hacker and Jan Van Dijk's. *Digital Democracy: Issues of Theory and Practice*. Sage Publications. UK. 2000.

CHAPTER THREE

THEORETICAL FRAMEWORK – PART TWO

LATIN AMERICAN ICT-RESEARCH

3.1. INTRODUCTION

This chapter focuses on Latin American research with an emphasis on social approaches to ICTs. I pick up also here the six areas of ICT-research discussed in the previous chapter but they are subsumed under different headings.

This chapter is divided into four sections: the first section is this introduction and outline of the chapter. The second section focuses on early economic, cultural and social Latin American theories on “dependency models” and describes briefly the historical economic and social context of Latin America from the 60s to the 90s as a backdrop to the early theories. The third section covers Latin America social approaches to ICTs. And the fourth section includes the conclusions about my approach.

The second section (3.2.) is divided into three sub-sections:

In the first sub-section (3.2.1.), I explore early theory (1960s and 1970s) on “dependency models” which had its origins in economic studies. This model of “dependency” was a dominant paradigm as well in media and cultural studies and it was prominent in debates about the challenges that global flows of communication pose to national cultures. In the second and third sub-sections (3.2.2. and 3.2.3.), I describe briefly the historical economic and social context of Latin America from the 60s to the 90s as a backdrop to the early theories.

In the third section (3.3.), I present Latin American social approaches to ICTs. This section is divided into two sub-sections.

The identity politics allows us to understand, in the first sub-section (3.3.1.), the shift of thinking amongst some Latin America theorists in the 1980s from economic and cultural dependency to

more complex understandings about social, communication and cultural issues which also have helped to characterize ICT research.

In the second sub-section (3.3.2.), I present a set of further social approaches to ICTs. I make a major shift now to perspectives and concerns that remain social but are more economic in nature. Some of the concerns within social approaches focus on the diffusion of ICTs and the distinct socio-economic disparities in Latin America: the so-called “digital barrier”, which is essentially a sub-product of pre-existing economic, social and cultural barriers.

3.3.2.1. A technological, economic and occupational perspective. I present in this sub-section some of the barriers that make ICT implementation difficult. These relate to technological, economic and occupational perspectives but also to some social, political and cultural ones. Some of the concerns given by these barriers are necessary factors to consider within a social approach because they show how and why some people are able to appropriate ICTs, overcoming barriers and limitations and why other people can't.

3.3.2.2. A cultural concern: national strategies and the need for a “cultural” shift. García Canclini and Martín-Barbero suggested in the 1980s the need to consider cultural issues in order to avoid simplistic views of cultural dependency reinforcing identity, social aspects and looking at cultural differences. Within ICT approaches concerns have reflected the ways in which new technologies play a key role in providing means for individuals to assemble and create cultural products. Technology allows the reorganization of the cultural staging and the constant crossing of local identities.

I present some cultural concerns in relation to ICT-appropriation deriving from a social vision that civil society groups have emphasized - including the need to redraw concepts of identity, human rights, cultural pertinence, cultural and linguistic diversity, and education. These perspectives imply a development and re-use of educational and cultural products supported by ICTs.

In the fourth section (3.4.), I offer a brief conclusion about my approach to the analysis of the specific case studies in Ecuador.

3.2. EARLY ECONOMIC, CULTURAL AND SOCIAL LATIN AMERICAN THEORIES

3.2.1. Dependency models in Latin America

I have begun here because many of the concerns of these early theories have been reflected within ICT studies. I explain this more fully at the end of this sub-section.

In the 1960s and 1970s, the most significant framework of understanding amongst social scientists in Latin America was the “Dependency Model” affecting political, economic, cultural, and historical analyses and strongly influencing Latin American intellectual discourse over the following three decades.

Enzo Falleto and Fernando Henrique Cardoso’s theory about dependency highlights some of the characteristics of this model. They wrote, amongst other work, in 1969, the “classic” of Latin American sociology – in English: *Dependency and Development in Latin America*⁷⁶.

Dependency theorists such as Falleto and Cardoso argued that underdevelopment was not caused by the failure of individual state’s economies but rather derived from the interlocking global economic system. The developed countries, they argued, do not simply benefit by exploiting those on the periphery; industrial capitalism pushes non-industrialized countries into a continuing and subordinate position of dependency:

“The dependency situation in the underdeveloped nations depends on subordinate links to the exterior and the social, political and economic behaviors of the national interests of Latin American countries ... The Latin American countries, as dependent economies, tie in to different phases to the capitalist process of different countries that act as center The predominance of the link, with the peninsular metropolis – Spain and Portugal - during the colonial period, and the dependency of England later and the United States in the end, is significant”⁷⁷.

⁷⁶ Cardoso, Fernando Henrique and Falleto, Enzo. *Dependency and Development in Latin America*. Berkeley. University of California Press. 1979. (Spanish original version 1969).

⁷⁷ Ibid. p: 67-70.

Extending dependency theories to the fields of media and culture, theorists concluded that communications systems were also “conditioned by US communication interests” and that “the resulting dominance was ultimately destructive to local cultures and identities”⁷⁸.

This cultural imperialist argument held that imported media products (usually from the United States) contained ideas that would lead to the decline of traditional lifestyles and values. Such an argument underlies, for example, Ariel Dorfman and Armand Mattelart’s pioneering discussion of Disney comics, *How to Read Donald Duck*:

“Why is Disney a threat? Because this product of Disneyland ... is imported, along with so many other consumer objects, to the dependent country By importing a product ... we are also importing the cultural forms of that society”⁷⁹.

Dependency theorists subscribing to cultural imperialist arguments were also key voices in the New World Information and Communication Order (NWICO) round tables that informed the proposals for national communication policies.

Antonio Cornejo Polar:

“Governments passed legislation to regulate or eliminate commercialism, to expropriate privately owned media, to subsidize local production, and to restrict the import of Western products. The underlying rationale was that the future of national cultures was at stake and that only state intervention could avoid the cultural colonization of Latin American societies”⁸⁰.

Theoretical arguments for national communication policies may then be seen as based on two key assumptions: First, that rational policy-making in the cultural domain is possible; and second,

⁷⁸ Beltrán, Luis Ramiro. *Aliens Premises, Objects, and Methods in Latin American Communication Research*. Communication Research 3. 1976. p: 127.

⁷⁹ Dorfman, Ariel and Mattelart, Armand. *Para leer al Pato Donald: Comunicación de Masas y Colonialismo*. Siglo XXI. Mexico. 1972. p: 155-6.

⁸⁰ Cornejo Polar, Antonio. Cited by: Waisbord, Silvio. *The Ties that still Bind: Media and National Cultures in Latin America*. Canadian Journal of Communication – Vol.23, No.3. 1998.

that domestic or regional cultural production will have an integrating effect on the societies that consume it and, most importantly, stall the colonization of local identities.

Estenou Madrid, a Mexican researcher, arguing from a nationalistic point of view and taking Mexico as an example, suggested that Latin Americans and Latin American countries, faced a "collective spiritual conquest", with the:

"new goods coming from the outside having the same effects as the sequins and glass beads brought by the Spanish conquerors five centuries ago in order to trade trinkets for our precious metals"⁸¹.

For him, the state therefore had to intervene using a "rational policy" for example for television with a nationalist communications policy needed to counter the medium's fragmenting impact with its high level of foreign import:

"... in order to maintain its ideological sovereignty, it must raise cultural activity, national identity, and its instruments of collective dissemination, such as the mass media, to the level of strategic fields"⁸².

Brazilian scholar Marques de Melo also suggested that in order to counter colonization of identities by "others", national television needed to be endorsed. A reinforced national identity could emphasize concepts of unity in the face of opposition:

"National Television places our cultural identities in an important place ... and inspires confidence in our national population, inducing (Brazilians) to discover themselves as ... capable of forging their own roads for development of their society, mixing traditional and modern elements, reason and passion, preservation and pride"⁸³.

As the argument goes, the experiments in state-controlled broadcasting of the late 1960s and 1970s, however, failed to curb the traffic of foreign content and capital and to set new grounds for

⁸¹ Estenou Madrid, Javier. La Televisión Mexicana ante el Modelo de Desarrollo Neoliberal. Fundación Manuel Buendía. Mexico. 1992. p: 80.

⁸² Ibid. p: 85.

⁸³ Marques de Melo, Jose. Development of the Audiovisual Industry in Brazil from Importer to Exporter of Television Programming. Canadian Journal of Communication, 20 (3), 317-328. 1995. p:327.

the organization of media systems. Moreover, the difficulty in separating the authoritarian character and goals of the administrations that carried out protectionist policies still haunts the debate of state and national identity.

These approaches hinged on a binary model of culture (national vs. foreign, traditional vs. modern) that informed the defense of national cultures, the suppression of multiplicity, the assumption of fixed and primordial identities, and the neglect of the processual characters of culture. There has also been a strong general push, in Latin America and elsewhere, in recent debates to rethink national cultures outside the parameters of "cultural imperialism".

Nevertheless, dependency theories and national communication policies with inherent concepts of identity, nation-state, and culture as fixed entities under threat still persist, providing a yardstick against which recent shifts in thinking might be measured.

Within ICTs studies, this early theory might be seen to have been an influence in many ways. First, with the advent of ICTs, especially the Internet, many social sectors haven't been able to incorporate ICT due to the high costs of technology and providers, lack of infrastructure or political crises. Many people have been excluded. This situation has generated the view that ICT-implementation is a new way of exclusion and domination where the "owners" of ICT impose their own rules and hegemonic positions with certain groups and countries that are not able to produce or fully take advantage of technology.

Second, in many national and international summits, discussions about the effects that imported products, such as new technologies and digital contents, are causing in less developed countries are common. There exists a growing consensus to avoid and reject all kinds of dependency and hegemonic positions that are being imposed, principally by US interests, also in relation to ICTs. I will explain this in the third section of this chapter when I present ICT research in Latin America.

Third, although less developed countries, such as Latin American countries, have to confront serious adverse technological, economic, social and political frameworks and limitations in relation to ICTs, different social groups, especially groups within the civil society, through different practices of ICT-appropriation, have generated a participatory and democratic criteria

against social and cultural domination. Different ICT practices have empowered individuals and organizations to speak out, form alliances, negotiate, or resist, as well as, coordinate legitimate social appropriation of technologies. This development is also a form of defence of local cultures. This reflects early theories in which there was a perceived need to avoid the cultural and social colonization and defend domestic and regional cultural production and practices and as well as to re-evaluate the role of the States in order to maintain ideological sovereignty, cultural activity, and national identity through national policies.

Fourth, the defense for a national culture has been reflected in the need to develop local software and local content. I will analyze this specifically within my case studies, principally e-Learning cases in Chapters 7 and 8.

3.2.2. Brief economic and social context from the 1960s, 1970s and 1980s

In this section, I describe in brief the historical economic and social context of Latin America from the 1960s, 1970s and 1980s as a backdrop of the early theories. There were many contextual features that can explain the appearance of these early theories.

In the sixties, according to Manuel Castells, the economic model of development was based on the export of raw materials and agricultural products, within a traditional model of unequal exchange of basic products with manufactured articles and technical specialized knowledge. This model was based on what was seen as a traditional commerce of dependency.

This dependency on exports of unrefined products placed Latin America in a disadvantaged position in the global economy. This coincided with a decline of primary commodity exports, in part through protectionist policies in Europe and the U.S., which in turn led to a depletion in government reserves with the exception of oil exporting countries. Therefore, at the end of the sixties, inflation was growing, internal demand dropped and social tensions halted the Latin American States (e.g. Argentina, México, Brazil).

As Castells argues,

“this situation paved the way for a variety of military regimes that allowed extended corruption and inefficiency, and in addition repression, social inequality, and economic difficulties”⁸⁴.

Alberto Acosta argues that during the 1970s in order to recover Latin American economies, private international banks, especially from the United States, offered and even forced, through the World Bank and IMF, Latin American countries to borrow money, particularly those with oil reserves and therefore potentially solvent. Dependency then was seen as also deriving from real economic structures:

“The indebtedness of Latin American countries was a response of the interests of the international banks, which did not consider the real necessities of the countries that were becoming indebted”⁸⁵.

At the end of the 1970s and beginning of the 1980s, the convergence between what is now seen as ‘irresponsible’ lending by private international firms, mainly from the United States, and the misuse of loans by Latin American governments, caused new economic crises. These were also reinforced by the economic politics implemented by United States raising the interests of the debts and putting, later on, increased political pressure on Latin American governments to pay the money back.

Some Latin American countries, on the brink of financial bankruptcy due to the amount of economic resources designated to pay the external debt, resorted to successive renegotiations of the debt with the international financial institutions.

During the 1980s, these adjustment policies of the debt, according to Castells, worked to restructure the Latin American economy through two measures:

“a) control of inflation, particularly by sharply reducing government spending, imposing fiscal austerity, tightening credit and money supply, and lowering real wages; and b)

⁸⁴ Castells, Manuel. *The Information Age: Economy, Society and Culture. Vol 1: The Rise of the Network Society*. Blackwell Publishers. UK. 1996. p: 145.

⁸⁵ Acosta, Alberto. Article: *La Deuda Externa de América Latina: Origen, Evolución y Alternativas de Solución*. Centro Andino de Acción Popular – Ecuador Debate, number 45. December, 1998. Available at: <http://ladb.unm.edu/econ/content/ecodeb/1998/december/deuda1.htm>

privatization of as much as possible of the public sector, particularly its most profitable companies, offering them up to foreign capital bidding”⁸⁶.

The fundamental objective of the IMF through these measures was to homogenize the macroeconomic characteristics of Latin America with those of the global economy, through investments. In this way, the argument goes, free commerce and production will go on, making the various economies more competitive and enabling the paying back of debts.

3.2.3. Brief economic and social context from the 1990s

During the 1990s, according to Castells, Latin America was incorporated into the world economy in a subordinate position. Some countries, however, used domestic strategies to preserve macroeconomic stability. Latin American governments have made several compensatory economical and political adjustments to avoid social upheavals. An informal economy, developing out of an exclusion from centralized markets, has led also to an establishment (sometimes a re-establishment) of local connections:

“... a considerable proportion of the Latin American population has been excluded from these dynamic sectors, like producers and also consumers. In some cases, peoples, countries and regions have been connected again through the local informal economy and the criminal economy oriented toward the exterior”⁸⁷.

Some countries of Latin America have endured major economic, politic and social crises (e.g. the internal warfare that afflicts Colombia, the authoritarian excesses of Peru, the economic and political crisis in Ecuador). These crises often reflect that the reduction of social perspectives by the State.

This has led to a deterioration of the democratic system increasing corruption, impunity, and drug-trafficking. Several other adverse factors (unemployment, migration, social fragmentation and impoverishment) are also increasing in Latin America affecting the remnants of social welfare

⁸⁶ Castells, Manuel (1996). Op. cit. p: 120

⁸⁷ Ibid. p: 159.

structures. As a result new social forces have been created to seek answers and solutions to the fragmentation of the State.

For example in Mexico, Brazil, Ecuador, Bolivia resistance groups have emerged as a consequence of this fragmentation:

“1994 will be remembered as a year that epitomized grass-roots resistance, because of the powerful indigenous and rural demands, in terms of both discourse and actions, in the arena of sociopolitical conflicts. That year began with the armed uprising of the Chiapas indigenous in Mexico, led by the Zapatista National Liberation Army (EZLN), followed by another indigenous/rural uprising in Ecuador, and the mobilizations of the landless in Brazil and Paraguay, as well as the marches of coca workers in Bolivia”⁸⁸.

These new movements or re-establishment of older movements not only have in turn led to change by expanding historical demands for socioeconomic equality with the addition of sociocultural diversity – but also new ways of organizing and acting. They call for autonomy and identity, decentralization and participation, horizontal relations and respect for differences, as opposed to manipulation, control, and dependence.

“... social protest has not only picked up momentum, but has been nourished by the presence of new organized grassroots expressions, to cope with the increasing pauperization or make specific demands (women, indigenous, youth, human rights, ecology, unemployed, etc.). Moreover, the labor movement has begun to show signs of reactivation, demonstrating its capacity to ‘regenerate and transform, adapting to new situations, changing forms and strategies, to survive and come back the next day and keep struggling’”⁸⁹.

Under this rebuilding of the organizational social fabric in Latin America, the advent of ICTs, especially the Internet, have accelerated the ability to communicate, have access to information, develop and share knowledge, with serious implications for social cohabitation. This new social dynamic has found in ICT a good support to carry out, prolong and extend communal resistance.

⁸⁸ León, Osvaldo; Burch, Sally and Tamayo, Eduardo (2001). Op. cit. p: 90.

⁸⁹ Munk, Ronaldo. Cited by: León, Osvaldo; Burch, Sally and Tamayo, Eduardo. Ibid.

Thus, in order to understand the process by which social groups appropriate and use ICTs and in order to characterize ICT social approaches, one must keep in mind the external conditioning and influencing factors that have been determinants in their approach and use of ICTs.

3.3. SOCIAL APPROACHES TO ICTS

3.3.1. Identity politics

From the 1980's theories of dependency and cultural imperialism were criticized for offering a narrow approach to cultural analysis. Néstor García Canclini in one of his most representative works *Hybrid Cultures* (Spanish version in 1989, English version in 1995) traced this evolution, also relating it to shifting economic and political contexts in Latin America.

García Canclini argued that a focus on imperialism and theories of dependency was inadequate for understanding current international power relations. García Canclini, as well as others, such as Jesús Martín-Barbero⁹⁰, Javier Estenoui Madrid⁹¹, and Renato Ortiz⁹², shifted the debate from economic structures to a concern with the role of the audience and an awareness that the audiences were plural and that large economic models did not sufficiently portray this multiplicity. Canclini did this by examining social practices and by questioning earlier comfortable and manichaeian assumptions concerning popular culture, national identity, mass communication and notions of genre. Two crucial moves, Canclini argued, have shaped analysis and views of the state, popular culture and identity.

First, there has been a broad reevaluation of the role of popular culture in identity formation, one that carries profound implications for thinking through the relations between the people and the national state in Latin America. Second, the very role of the national state as an instance of

⁹⁰ Martín-Barbero, Jesús. *Communication, Culture and Hegemony: From the Media to the Mediations*. Sage Publications. UK. 1993 (1987 Spanish edition).

⁹¹ Estenoui Madrid, Javier. *La Televisión Mexicana ante el Modelo de Desarrollo Neoliberal*. Fundación Manuel Buendía. Mexico. 1992.

⁹² Ortiz, Renato. *Cultura Brasileira e Identidade Nacional*. Brasiliense, São Paulo, 1985.

Ortiz, Renato. *Cultura e Modernidade*. Brasiliense, São Paulo. 1991.

political and cultural sovereignty has come under comprehensive challenge, which has unleashed questions concerning the locus and exercise of cultural power and identity formation.

García Canclini addresses also in *Hybrid Cultures* the impact of what he terms the *hybridization* of culture on local conceptions of modernity and on identity formation. He uses the term “hybridization” as he argues it is better suited for grasping diverse intercultural interrelations than “mestizaje”, which is limited to racial mixings, or “syncretism”, which almost always refers to religious combinations or to traditional symbolic movements. Also, “hybrid” takes into account those “classic” mixtures inferred by “mestizaje” as well as the interlacing of the traditional and the modern, the educated, the popular, and the mass.

The notion of hybridity was useful, he argued, for designating the mixtures of indigenous styles with Spanish and Portuguese iconography. It also served to describe processes of independence and national construction in which modernizing projects co-existed alongside “tradition”. The overall context of this work is that of Latin America’s unfinished political and economic modernization process, in which, in García Canclini’s argument, national, state-policed cultures have collided with the post-1980s transformation of “symbolic markets”. The resulting novel, hybrid mix of culture, including the popular and the “massified”, has, he argues, been produced by urban expansion and *redrawn concepts of self and identity*.

García Canclini suggests that two processes characterize the new period. First, the *decollection* of symbolic goods, that is the individual reordering of cultural products according to personal taste rather than to established, socially consecrated canons of consumption. In this displacement of once-established rules, new technologies of reproduction – photocopies, VCRs, videos and video games - play a key role in providing the means for individuals to assemble their new collections of cultural products. This shift has a profound impact on artistic production (within popular culture) which tends to lack “referents of legitimacy”:

“The coexistence of these contradictory uses reveals that the interactions of new technologies with previous culture makes them part of a much bigger project than the one they unleashed or the one they manage The reorganization of the cultural stagings

and the constant crossing of identities require that we ask ourselves ... about ... the material and symbolic relations among groups"⁹³.

In addition to changes in cultural consumption and a breakdown in concepts of national culture, García Canclini argues also that there is a simultaneous process of *detritorialisation* involving the:

"loss of the natural relation of culture to geographical and social territories and, at the same time, certain relative, partial territorial relocalizations of old and new symbolic productions"⁹⁴.

Examples given are the rise of Brazil as a cultural exporter and the large-scale Latin American labour migration to the US.

In terms of how cultural and national identities are conceived, García Canclini raises then a number of questions and issues. First, the reorganization of culture and the crossing-points of identity mean that the rules governing social relations have changed and need to be interrogated in a fundamentally different way than simple concepts of national versus colonization.

Second, there is no longer a simple coalescence of the national and the popular. This is because there is no hegemonic national space, the nation having dissolved into a "dense network of economic and ideological structures"⁹⁵.

Third, García Canclini raises questions about whether collective identity still occurs predominantly within territorial frames. Instead he suggests that there is a significant loosening (detritorialization) of the relations between, for example, cultural products and their place of origin. For instance, as mentioned above, the migration of millions of Latinos to the USA led to a shift of Latin American culture to North America. This shift and re-placement of cultural production does not fit the uni-directional model of cultural imperialism.

⁹³ García Canclini, Néstor. *Hybrid Cultures: Strategies for Entering and Leaving Modernity*. University of Minnesota Press. USA. 1995. (Spanish original version 1989). p: 228.

⁹⁴ *Ibid.* p: 229.

⁹⁵ *Ibid.* p: 19.

Following this conception of identity, Latino identity in the United States, as one example, may involve a number of facets. It may involve identification with Latin American states, with the U.S., and with any number of hybrid cultural expressions from mambo to disco to rap. Identity is, in other words, no longer conceived of as fixed and static and able to be “corrupted” by “foreign” products. The analyses that follows from the shift in thinking is also one of looking for the ways in which particular audiences use a wide variety of products for different purposes without necessarily becoming “corrupted”. This move is reflected also in media theory elsewhere.

García Canclini’s more recent analysis *Consumidores y Ciudadanos* (Grijalbo. México, 1995 – only Spanish version), returns to issues of cultural policy and at times picks up again concerns with opposition. He shifts the debate onto the terrain of what he calls “cultural citizenship”. Here citizenship is invoked as a possible counterweight to the impact of neo-liberal market relations. “Cultural citizenship” in this conception makes a shift from the formal notion of membership of a state to the informally circumscribed practices of belonging that relate to given groups.

Central to the argument is the link between cultural diversity, cultural policy and the reform of the state in a context where identities are shifting from the modern to the “postmodern”. The focus of analysis remains hybridization processes. Local audiences, however, are seen not to be unified, leading to a need to consider the particular contexts and conceptions of identity of individual groups as also discussed above:

“Nations and ethnic groups continue to exist. They are ceasing to be, however, for the majority, the principal producers of social cohesion. But the problem does not seem to be the risk that globalization may destroy them, rather to understand how ethnic, regional, and national identities are reconstructed in globalized processes of intercultural segmentation and hybridization”⁹⁶.

García Canclini therefore sets a double task, which is to understand both post-national formations of identity and the same time to try and address the reshaping of national cultures. He outlines a double movement, first of deterritorialisation (affected, amongst others, by the strategies of international marketing and blockbusting world cinema) and, second, at the same a

⁹⁶ García Canclini, Néstor. *Consumidores y Ciudadanos: Conflictos Multiculturales de la Globalización*. México. Grijalbo. 1995. p: 113.

reterritorialisation based in social movements and local media. According to this argument, the national space is “relativist” and “fundamentalist” notions of identity as monocultural are rejected. The task then is to find the “transdisciplinary” tools of analysis to move ahead. Media and identity-formation need to be situated in new relations between “multimedia and multicontextuality”.

García Canclini’s theories and concerns are useful for my study because: First, there was a recognition of a “hybrid mix of culture” which redrew concepts of self and identity and suggested as well the creation of cultural products in which ICTs provide new means for individuals to create and assemble cultural products across set identities. Technology allowed the reorganization of the cultural staging and the constant crossing of local identities. I find these concerns useful within my study because they allow me to analyze how different social groups are re-valuing cultural and identity concepts and ideas through ICT-appropriation. I will look at this in particular in Chapter 8 and 9 when I consider case studies within rural communities situated in the Amazonian and Coast regions.

Second, García Canclini sets a double task within national cultures in relation to processes of modernization which also, in my opinion, offer ideas for studies of ICT. First, regarding how national cultures are being affected by the strategies of international companies and business that promote technology; and second, how social groups appropriate technologies, reinventing and perceiving them within local territories and out of them. Following these tasks media and ICTs are being evaluated within the national and anti-national, and moreover the need for considering social fragmentation and differences has been recognized. These concerns have suggested as well the need to look at the demands and uses of social groups which devalue and reconstruct technologies.

Another concern that I have considered important has been noted by Jesús Martín Barbero.

Martín-Barbero, in his book *Communication, Culture and Hegemony*⁹⁷ adds to previous concerns that the production of cultures and subcultures tied to the transnational commercial media markets, produce new “cultural communities” that are difficult to compare or understand in relation to a given territory.

⁹⁷ Martín-Barbero, Jesús (1993). Op. cit.

“These are not only new cultures but, essentially, youth cultures, and are frequently accused of being anti-national because they have no roots in a given territory. However, they are not so much anti-national as they are a new way of perceiving identity”⁹⁸.

He adds that the media may also move away from the national:

“memories have become deterritorialized, images have become denationalized, the youth are appealed to through music and video”⁹⁹.

Through this perspective the national and the anti-national has been superseded by social fragmentation and the segmentation of markets, a process occurring at both the local and the global levels. These combined tensions mean that, according to Martín-Barbero, there are no ways of defining boundaries of a common national identity and culture.

The growth and increasing density of media, computer technologies, and electronic networks have devalued and even destructed the spatiality and different temporalities that made up the fabric of the old society and demand the reinvention of ties of belonging and identity.

These concerns point out the need to look at how people are being affected by the new sources that technology offers. I will use some of these concerns for my study when I analyze how young people through the Internet are acquiring new information and knowledge that is changing the way in which they perceive culture and their own identity formation (Chapter 7 and 8).

3.3.2. Further social approaches to ICTs – differing perspectives on barriers

The above concerns are primarily conceptual with a cultural focus. I make a major shift now to perspectives and concerns that remain social but are more economic in nature. Some of the concerns within social approaches focus on the diffusion of ICTs and the distinct socio-economic disparities in Latin America: the so-called “digital barrier”, which is essentially a sub-product of

⁹⁸ Martín-Barbero, Jesús. Medios y Culturas en el Espacio Lationamericano. Revista de Cultura Pensar Iberoamérica. Número 5. Organización de Estados Iberoamericanos. Enero – Abril 2004. p: 11. Available at: <http://www.campus-oei.org/pensariberoamerica/ric05a01.htm>

⁹⁹ Ibid. p: 10.

pre-existing economic, social and cultural barriers. Both of these “social” approaches will be important for the later case studies.

3.3.2.1. A technological, economic and occupational perspective: *digital barriers*

I present in this sub-section some of the barriers that make ICT implementation difficult. These relate to technological, economic and occupational perspectives but also to some social, political and cultural ones. The “digital barrier” is also equivalent to the search for specific mechanisms to overcome the barriers through the more adequate use of ICTs.

The variables I will consider are: access; lack of infrastructure; costs of connection and computers; user friendliness, basic skills and overcoming “computer fear”; corporate domination; information elite; availability of content in an appropriate language; lack of public policies; education and ICTs; and relations between North and South.

a) Access

According to the Human Development Report, ICT-appropriation is uneven:

“The *Internet* has grown exponentially, from 16 million users in 1995 to more than 400 million users in 2000 - and to an expected 1 billion users in 2005. Connectivity is rising at spectacular rates in Europe, Japan, the United States and many developing countries. In Latin America Internet use is growing by more than 30% a year - though that still means that only 12% of individuals will be connected by 2005. Broader expansion is limited by low household incomes”¹⁰⁰.

In Latin America, regional penetration levels will remain low, with the majority of users concentrated in Brazil, Argentina and Mexico. According to the NUA survey services:

¹⁰⁰ Human Development Report 2001: *Making New Technologies Work for Human Development*. Chapter 2: *Today's Technological Transformations-creating the Network Age*. Op. cit. p. 35.

"In Latin America there were 4.8 million Internet users at the end of 1998, with 19.1 million users expected online by 2003. This figure is expected to grow by 50 percent per annum until the year 2003 when there will be 38 million Internet users in the region"¹⁰¹.

In Ecuador the growth of the Internet has also accelerated. Its density, however, is below the average of the rest of Latin America countries.

"The dispersion of the Internet is a fifth compared with Colombia and Peru. Ecuador shows one the lowest percentage of household with access to the Internet" In Ecuador the number of users of the Internet (by 100 inhabitants) compared with rest of the Andean countries (Venezuela, Colombia, Peru and Bolivia) is located at the bottom with 0.30% ..."¹⁰².

According to the Institute for Connectivity in the Americas and the Ecuadorian Telecommunication Supervision (SUPERTEL in Spanish¹⁰³), Ecuador had, in March 2005, 43.8 Internet users per 1000 inhabitants of which 107.887 are personal accounts and 14.058 corporative counts¹⁰⁴.

In spite of an increase in the use of Internet in the last years, Valarezo argues that the major obstacles continue being the regulatory laws and costs:

"the prices of the access terminals (PC) and the international entrance connections are high, and also the GIP per inhabitant is too low"¹⁰⁵.

A common presumption is that increased access is just a matter of time because people will become used to computers, networks and access to Internet. Van Dijk argues, however, that this presumption is ethically unacceptable as many people are not simply "want-nots" but "have-nots" as they don't have access to ICTs. He argues:

¹⁰¹ NUA: *The World's Leading Resource for Trends & Statistics*. Available at: http://www.nua.ie/surveys/?f=VS&art_id=905355410&rel=true

¹⁰² Villao, Freddy and Flores, Sergio. *La Comunidad Andina y su Preparación para el Mundo Interconectado: Ecuador*. Proyecto Andino de Competitividad. Escuela Politécnica del Litoral. Ecuador. Marzo, 2001. Available at: <http://www.cid.harvard.edu/andes/Documents/WorkingPapers/IT/ITEcuador.pdf> (My translation). p: 44.

¹⁰³ More information: www.supertel.gov.ec

¹⁰⁴ Available at: http://www.supertel.gov.ec/telecomunicaciones/v_agregado/estadisticas/internet.htm. Data update to March 2005.

¹⁰⁵ Valarezo, Francisco. Available at: http://www.supertel.gov.ec/telecomunicaciones/v_agregado/estadisticas/internet.htm. Data update to March 2005.

“Those people who cross the first hurdle, and who are willing to use the equipment involved, inevitably confront the second hurdle: not having a computer or a network connection themselves or not having access to one at work or at school”¹⁰⁶.

Indeed the risks of inaccessibility suggest that for developing countries, where the telephone needed over 70 years to become more or less generally diffused as a medium, the adoption and diffusion of computer networks and new media won't reach a level of diffusion of 80 or 90 per cent within the next three decades. This will exacerbate the gap between people within a particular country as well as between countries:

“The advent of Internet and other ICTs and the awareness that these technologies are at the heart of the knowledge economy has prompted fears that those people, countries and regions that are left behind will simply be excluded from the possibility of leapfrogging by benefiting from the information society. The result will be an exacerbation of the gulf between rich and poor leading to a more unfair and unstable world”¹⁰⁷.

b) Lack of infrastructure

The telecommunication industry has undergone a major transformation over the last two decades. Convergence has pushed traditional telecommunication operators into new areas such as Internet and broadcasting.

As Fernández argues, Latin America has become a “hot spot” for such global scale telecommunications:

“There exists a huge investment from large international operators and independent consortiums that are starting to invest in an appropriate infrastructure. The case of the fiber optic cables network to connect Latin America with US backbones means an

¹⁰⁶ Van Dijk, Jan. *The Network Society*. Sage Publications. London, UK. 1999. p: 149.

¹⁰⁷ Third Global Forum. *Fostering Democracy and Development Through e-Government*. Naples. 15-17 March, 2001.

investment of 170 thousand km of cables, worth 20 billion US dollars, from the 27.5 billion US dollars to be invested in this means in the whole world from last year until 2003"¹⁰⁸.

The telecommunication business in Latin America, especially in urban areas (75% of the Latin American population is urban), seems to be very promising:

"The Internet in Latin America is characterized by the growing convergence between telecommunication companies, and companies of massive communication and entertainment media. The recent pace of acquisitions and mega-fusions is so accelerated in the region that it is difficult to be up to date with the latest happenings in the sector"¹⁰⁹.

This situation, however, according to Hilbert and Katz, depends on a number of factors that create unequal infrastructure access, such as income levels:

"Countries with higher income levels have higher Internet penetration ... a more detailed analysis per capita Internet penetration and per capita income for 2001, shows that most of the countries in the region are below the statistical norm (which is nothing more than an international 'average' of the relationship between income and connectivity) ..."¹¹⁰.

In Ecuador for example:

"... the telephonic density is 12,69% per approximately 13 million inhabitants (the total population) in March 2005. Although, in some of the Ecuadorian provinces digitalization has reached 100%, the telephonic distribution is not equal in all of them. It is concentrated in the provinces with more economic development (Quito and Guayaquil) in some of the provinces the telephonic density is 5% by 180.000 inhabitants as well in some of the provinces the external telephone plant (networks) continue being old (copper cables) and bad quality. The implementation of new routes with fiber optic cable that permit the use of broadband transmission is necessary"¹¹¹.

¹⁰⁸ Ibid.

¹⁰⁹ Ibid.

¹¹⁰ Hilbert, Martin and Katz, Jorge. Building an Information Society: A Latin American and Caribbean Perspective. ECLAC. 2003. p: 65. Available at: <http://www.eclac.cl/publicaciones/DesarrolloProductivo/5/LCL18451/Chap2.pdf>

¹¹¹ Available at: <http://www.supertel.gov.ec>.

c) Costs of connection and computers

Telecommunication, Internet and computer costs are particularly high in Latin American countries compared with the low incomes per capita of the citizens.

A large part of the reason for the high costs, also, is that most Latin America countries have to pay for renting the bandwidth (e.g. in the United States the annual average cost line is 3.800 US dollars; compared to 180.000 US dollars in Argentina). This problem is widespread in developing countries, for example:

“monthly Internet access charges amount to 1.2% of average monthly income for a typical US user, compared with 614% in Madagascar, 278% in Nepal, 191% in Bangladesh and 60% in Sri Lanka”¹¹².

In Ecuador, costs of international connections have been more evident compared to neighboring countries:

“While the tariffs of entrance in our country have a price that oscillates between 1500 and 2000 US dollars for each Mbps¹¹³, in our neighboring countries the prices are between 190 and 600 US dollars. The main problem for this is the existence of public and private telephonic monopolies for telecommunications services”¹¹⁴.

Andinanet, one of the Internet Service Providers, offer a student tariff for 10 dollars per month for 7 hours of connection. To this cost, we have to add the telephone cost that will be approximately 50 dollars per month, using the Internet approximately 4 hours per day. If we consider that the minimum salary is 150 US dollars per month, one third of the salary is needed to cover the Internet and telephone costs. This is impossible to afford for most of the Ecuadorian families with low income salaries.

¹¹² Human Development Report 2001. Making New Technologies Work for Human Development. Chapter 2: Today's Technological Transformations-Creating the Network Age. op. cit. p: 35.

¹¹³ When spelled *Mbps*, short for *megabits per second*, a measure of data transfer speed (a megabit is equal to one million bits). Network transmissions, for example, are generally measured in Mbps. Available at: <http://www.webopedia.com/TERM/M/Mbps.html>

¹¹⁴ Ibid.

According to Valdivieso,

“the telephone costs are really high in Ecuador, more than in Europe, this is because we have a telecommunication monopoly in the hands of three companies: Andinatel, Etapa and Pacifictel, which are not profitable or competitive companies”¹¹⁵.

Another factor, besides international connections prices, influencing ICT usage, is the high cost of hardware and software licenses. In Ecuador, the software costs are high compared with Colombia, Peru and Argentina. This has been a reason for people pirating software. According to the World Bank, 62% of the existent software WIN XP has been pirated in Ecuador¹¹⁶.

Hilbert and Katz add to this that there is a complex combination of interests:

“A complex combination of low competition and monopoly pricing, international price discrimination, market segmentation and other characteristics of the hardware industry ... drive up prices in hardware equipment in Latin America. Comparing the prices of Personal Digital Assistant (PDA) handheld computers in the United States, the European Union, Mexico and Brazil shows that even though the income per capita (GNI) is decisively lower in Latin American countries, hardware equipment is more expensive”¹¹⁷.

d) User friendliness, basic skills and overcoming “computer fear”

Personal computers and even more computer networks were notoriously unfriendly in their operation. With the advent of new graphical and audio-visual interfaces and operation systems the situation has improved. However, Van Dijk still argues that “the new media is not attractive to many women, low educated people and particular ethnic minorities”¹¹⁸.

¹¹⁵ Valdivieso, Alfredo. Newspaper Hoy. Article: [La Brecha Tecnológica se Ahonda en el Ecuador](http://www.hoy.com.ec/impnoticia.asp?row_id=195196). January 2005. Available at: www.hoy.com.ec/impnoticia.asp?row_id=195196

¹¹⁶ World Bank World Development Indicators Database, 2001; Piracy data from Business Software Alliance.

¹¹⁷ Hilbert, Martin and Katz, Jorge (2003). Op. cit.

¹¹⁸ Kenneth Hacker and Jan Van Dijk's. [Digital Democracy: Issues of Theory and Practice](#). Sage Publications. UK. 2000. p: 174.

Cohen and Levinthal also suggest that this leads to technological leap-frog. Becoming accustomed to ICT:

“involves an extended period of learning and adaptation of the new technology. When access to the technology remains prohibitively expensive, a large number of complementary technologies and capabilities are required for successful implementation ...”¹¹⁹.

In this way, user-friendliness is relevant for the practice of using ICTs because it is not easy for an ordinary citizen to look for information in a complicated computer system or to follow or contribute to one of the many discussions groups through the Internet especially when costs are high and experimentation is then limited.

It is also necessary to have some basic skills and to overcome “computer fear” related with:

“the feeling of personal shortcoming (leading to insecurity), the fear of being excluded, and the negative attitude towards ‘digitalization’ of people most lacking these skills give rise to computer fear or button fear”¹²⁰.

e) Corporate domination

The growing consolidation of technology in commercial hands mitigates the extension of ICTs. Pasqualini describes this situation:

“Around the world there is widespread concern about corporate domination of mass communications media and the resulting censorship (through gate keeping and the filtering of information) which has become a defining feature of the ‘marketplace of ideas’”¹²¹.

¹¹⁹ Cohen and Levinthal. Cited by: Mansell, Robin. Digital Opportunities and the Missing Link for Developing Countries. Oxford Review of Economic Policy, VOL 17, No. 2. Oxford University Press. 2001.

¹²⁰ Ibid. p: 169.

¹²¹ Pasqualini, Rebekah. Grassroots Organisations and the New Media Information Technologies: the Personal Computer, Email, the Internet and the World Wide Web. <http://communication.students.rmit.edu.au/projects/burma/grassroots.html>

Van Dijk argues also that governments don't regulate the conditions in which ICTs are taking place leaving corporates open to creating their own rules:

"in this age of liberalization and privatization, governments have acquired the role of catalyst and protector of social and legal conditions in the construction of the information superhighway The role of the government, however, was left to business enterprise and the complete dominance of corporate interests, constructing their own interests and expectations"¹²².

According to Hilbert and Katz in reference to some Latin American governments:

"... governments are incapable of reducing the inequality caused by competitive markets. Creative ways of cooperating with the private sector, as well as new incentives need to be found"¹²³.

León, Burch and Tamayo add to this that for transnationals, located mainly in countries in the North, the goal is not only to conquer markets (and exploit the manual labor of peripheral countries) but also to control the virtual space or cyberspace, which is considered a strategic field to extend business to everybody and to operate new markets:

" 'The new economy', 'digital economy' or 'ICT sector' ... it is an appetizing dish because it moves thousands millions of dollars annually in the commerce of equipment, software, sale information, mobile telephony and other services. Only the world-wide market of telecommunications reaches, in 2000, the number of 840.000 millions dollars of the United States and it grows to a rate of 10% annually"¹²⁴.

Ecuador is a good example of corporate domination. Telecommunication markets, Internet providers and mobile telephone services are in the hands of a few companies, which in many cases are not profitable.

¹²² Van Dijk, Jan (1999). Op. cit. p: 224, 225.

¹²³ Hilbert, Martin and Katz, Jorge (2003). Op. cit. p: 73.

¹²⁴ León, Osvaldo; Burch, Sally and Tamayo, Eduardo (2004). "Se Cayó el Sistema: Enredos de la Sociedad de la Información". ALAI. Quito. 2004. p: 68. (My translation).

Valdivieso argues, for example, that Pacifictel, an Ecuadorian telecommunication company:

“not only offers a bad service, but also in the last year had lost money ... this happened mainly due to corrupted and inefficient management of the company”¹²⁵.

f) Lack of public policies

Hilbert and Katz argue that in Latin America and the Caribbean there are two kinds of policies used to narrow digital barriers. The first one can be termed as “micro-policies”. They are projects that aim for fast results:

“Pilot programs are under way in many countries in the region that provide Internet access at schools, public libraries, community centers, other official buildings (such as post-offices) and low-cost ‘info-centros’”¹²⁶.

The second ones are long-term strategies:

“The benefits of these kinds of ‘macro-policies’, such as ICT convergence might be less tangible or apparent in the short term, but are very important in a development technological catch-up strategy ...”¹²⁷.

Although, as Hilbert and Katz argue, there are some policies, mainly in the public sector, they are limited public policies that do not lead to universal ICT access. This leads to a call for a need to find and create policies that can exploit, through creative ways, the available resources to the maximum. For many countries in Latin America, however, such as Ecuador, these policies are lacking – as we shall see in later chapters.

g) Information elite

¹²⁵ Valdivieso, Alfredo (2005). Op. cit.

¹²⁶ Hilbert, Martin and Katz, Jorge (2003). Op. cit. p: 74.

¹²⁷ Ibid.

The digital divide exists between countries at different levels of development, and within a country (for instance between urban and rural areas) between men and women, between the educated and the unschooled or between the young and the elderly.

“It is a result of socio-economic disparities and thus little different from other income, health and education divides. The root cause of these disparities is poverty. The less money a country’s citizens have, the less likely they are to use ICT”¹²⁸.

The higher social classes appear to benefit more from ICT than the lower ones, and there is a possibility of an existing ‘information elite’ strengthening their position in society while certain other social groups are further excluded:

“We are not dealing here with a simple division into two groups. On the contrary, the whole spectrum of social positions is becoming more extended and complicated. Therefore, we should not seek to avoid any increase in information inequality as such, but should try to prevent unequal distributions becoming permanent structures of society. In such a situation, some people would take all the decisions in society, while others would not have part in any decision at all. This would be a real threat to democracy”¹²⁹.

Most of the countries have a small “elite” with new media access and experience. The elite is working in the few cities and nodes of their countries, and are connected to global networks. Other areas of society, important for development, are marginalized:

“The few computers and network connections in Latin America countries are barely used for applications in agriculture, health, education, public works, water resources, public transportation, public information, population planning, rural and urban land development or public utilities. Instead, they are used by the military, executive branches of government, trans-national corporations, banks, major universities, and research centers”¹³⁰.

¹²⁸ International Telecommunication Union (ITU) - *World Telecommunication Day the Internet: Challenges, Opportunities and Prospects*. 17 May 2001. Available at: <http://www.itu.int/newsarchive/wtd/2001/ExecutiveSummary.html>

¹²⁹ Van Dijk, Jan (1999). *Op. cit.* p: 235.

¹³⁰ *Ibid.* p: 230.

According to Castillo information is then only spread to limited sections of society:

“the problem is that information continues being only for authorities who don't want to give information to anybody ... information continues being archived or hidden”¹³¹.

h) Availability of content in an appropriate language

Language also affects the diffusion of Internet. According to one study of the Internet Society, “more than 80% of web-pages are in English, though only 54% of Internet users have English as their mother tongue”¹³².

León, Burch and Tamayo:

“Latin America and the Caribbean have great linguistic wealth. Spanish, Portuguese, English, French, dozens of indigenous languages, and several dialects of *Creole* are spoken, with the peculiarity that the great majority of the population understand the same language, Spanish ... Although this facilitates intra-regional communication, the predominance of English in contents on the Net is an obstacle for Internet use, since that language is only understood by a minority of the region's population”¹³³.

In Ecuador with 13 million inhabitants of which approximately 30% are indigenous and speak different languages, the need for appropriate content is high.

i) Education and ICTs

According to Sanatan educational levels also have an important effect in the use of ICTs:

“in a recent study on Trinidad and Tobago, we could observe that the people who had completed their secondary studies represented more than 50% of ICT users in the country”¹³⁴.

¹³¹ Newspaper El Comercio. Editorial: *El Truncado Acceso a la Información*. Quito. May, 2005.

¹³² León, Osvaldo; Burch, Sally and Tamayo, Eduardo (2001). Op. cit. p: 112.

¹³³ Ibid. p: 112.

¹³⁴ Sanatan, 2002. Cited by Katz, Jorge y Hilbert, Martin (2003). Op. cit. p: 27.

It is possible to assume that a lack of education can be a crucial factor in the widening of the digital barrier, as illiteracy in minority or marginal groups (the case of indigenous people and women, especially in the Andean region) is excluding them from the use of ICT and the Internet. Of course, to mitigate the illiteracy some alphabetization methods and projects based on ICT have been put into practice in the region, through reading and dictation techniques assisted by computers¹³⁵, even if these methods don't by any means include all illiterate people.

León, Burch and Tamayo suggest also that illiteracy is major factor:

“Functional illiteracy and low levels of schooling prevailing in the countryside and marginal urban areas are true obstacles to Internet access. In spite of all the literacy campaigns, illiteracy rates are still high. In Guatemala, for example, four of every ten persons are illiterate. In Bolivia, it is two of every ten. Illiteracy especially affects indigenous populations and women”¹³⁶.

j) Relations between North and South

According to León, Burch and Tamayo there is a need for overcoming the unequal participation of North and south countries in relation to “information society” matters. This argument comes from the perspectives presented at the *World Summit on the Information Society*¹³⁷ (WSIS) which is the major summit to discuss issues concerning the “information society”. This summit has been held in two phases: the first one was held in Geneva (December, 2003), and the second one will take place in Tunisia (November 2005).

In the first Summit, three sectors were summoned: governments, representatives from the private sector and civil society, where the first one has the power of decision and the two last ones only as observers that can make proposals. In reality, according to León, Burch and Tamayo, the specific role and weight of each one of these actors are very different:

¹³⁵ For example: the regional project BI-ALFA (CELADE/CEPAL, <http://www.eclac.cl/bialfa>) which is a model of education through computers teaching to read and write.

¹³⁶ León, Osvaldo; Burch, Sally; Tamayo, Eduardo (2001). Op. cit. p. 110.

¹³⁷ More information: <http://www.itu.int/wsisis/>

“North countries participate in conditions and challenges very different from South countries. The first ones are the countries with a high level of development, which as well have developed more ICTs: Within their economies, the handling of the information and knowledge has a preponderant place in the work, education, commerce, medicine and entertainment. Also, these technologies have been used to extend the power of transnational companies (mainly situated in North countries) to the entire planet. Nothing surprising, then, that North communicational and informational hegemony is reinforced and extended through the WSIS”¹³⁸.

Bearing in mind this situation, the South countries constitute a second block that participates in conditions of disadvantage and inequality at WSIS:

“South countries have little participation because the unique frame imposed by the North ‘however’, Latin America which has adopted a common position in the Bávaro Conference (Dominican Republic, 2003) has emphasized the relation of the ICT with development and the need for a major equilibrium north-south in the technology distribution and costs. Also, some governments (Cuba and Brazil) are concerned about the excessive attention to the companies’ demands”¹³⁹.

One of the explanations for this is that business companies, particularly large transnationals in the fields of telecommunication, information technology, entertainment and the media, as I mentioned previously, have imposed their rules regulating services and commercial agreements.

León, Burch and Tamayo exemplify this referring to the fact that the World Trade Organization (WTO), is in charge of the liberalization of telecommunication, audiovisuals, informatics, and publicity in a global range:

“The WTO fulfills a double role, quite contradictory. On the one hand, it advocates the liberalization of the services, which means to raise all the barriers that prevent the expansion of businesses of the transnational companies. But, on the other hand, it advocates a strong and severe regulation of such services through agreements relates

¹³⁸ León, Osvaldo; Burch, Sally; Tamayo, Eduardo (2004). Op. cit. p: 132. (My translation).

¹³⁹ Ibid. p: 133. (My translation).

with intellectual property that protect, assure the gains of the same companies and impose rules to follow”¹⁴⁰.

Bonilla and Cliche add to this argument that there is a danger of exclusion:

“In our divided and fragmented Latin America societies marked by social inequalities, the trend will be towards further exclusion of the more vulnerable sectors, which are precisely the ones that are also at the margin of information and communication circuits”¹⁴¹.

León, Burch and Tamayo suggest that the dominant logic creates then a vicious circle, by which the most information-poor countries are also those with the least possibilities to take advantage of available information, as well as the greatest limitations for their development:

“The promise of Internet for development – in as much as it based on an instrumentalist conception that leaves out structural factors and the international conditioning that threads together the history of countries – in the end is no more than a variation on the concept that has dominated relationships of North-South dependency. That is, southern countries should not aspire to be anything but markets for the information and cultural products produced in the North”¹⁴².

The spreading imposition of a system governed by large transnational consortia and based on the principles of accumulation, utility, efficiency and productivity, is occurring in parallel with the gradual widening of the barrier between rich and poor countries, between the rich elites and the impoverished majorities of countries.

“Digital barriers” in other words refer not only to technological, economic and occupational issues, but also to wider barriers: basic skills, corporate domination, information dissemination, language, political decisions, public policies, education, and within broader scenarios to the agreements and issues discussed between north and south countries in relation to ICT matters.

¹⁴⁰ Ibid. p: 67. (My translation).

¹⁴¹ Bonilla, Marcelo and Cliche, Gilles (Eds). Internet and Society in Latin America and the Caribbean. FLACSO/International Development Research Center. Ecuador. 2004. p: 4.

¹⁴² León, Osvaldo; Burch, Sally y Tamayo, Eduardo (2001). Op. cit. p: 62.

The distinct barriers that Latin America and specifically Ecuador have to confront are important within my study because ICT-appropriation depends not only on technological development and implementation but it is also a manifestation of the current social, economic, political and cultural development and dynamic that influences the ways in which ICTs are appropriated.

3.3.2.2. A cultural concern: national strategies and the need for a “cultural” shift

Bonilla and Cliche suggest also that barriers are not solely economic. There exists also a symbolic divide, characterized by unequal distribution of knowledge and of cultural goods that are essential for an individual, culture or society:

“There is a risk that access to certain information could be privatized, restricting public use of data bases for cultural, educational or scientific purposes”¹⁴³.

According to Bonilla and Cliche, however, what is necessary to do under such conditions is to restart the issue, in the sense that the question is not how ICTs will be put at the service of development, but how Latin American countries, in defining ICTs projects, establish national policies to take advantage of them.

They suggest that there is 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 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”¹⁴⁴.

Under this last parameter, social organizations and new networks have been re-evaluating the role of technologies. They:

¹⁴³ Bonilla, Marcelo and Cliche, Gilles (Eds). (2004). Op. cit. p: 44.

¹⁴⁴ Ibid. p: 3.

“stand out as a counterweight, in as much as their entry on this new scene is marked by participatory criteria, which is part and parcel of the democratizing role they play. And to this extent they empower individual and organizational abilities to speak out, form alliances, negotiate, or resist, in order to coordinate legitimate social appropriation of such technologies”¹⁴⁵.

Social organizations have considered the importance of taking ownership of such resources, particularly the Internet, which means not only being users, but also deepening their understanding of the logic behind them, in order to benefit fully from them. In this respect, they promote trends in other directions that concern principally social and cultural aspects:

“... it is also becoming evident that they have a role to play in defining the people’s interests with regard to the orientation of ICT development and deployment, which would imply not only influencing the respective decision-making bodies, but even re-conceptualizing the dominant discourse and taking on the task of challenging meaning, values and social aspects”¹⁴⁶.

Juliana Martínez agrees that based on the practical experiences in Latin America, one must look at social changes that go beyond connectivity and promote equitable access, meaningful use and social appropriation of the available resources. According to Martínez, the primary concern regarding ICTs is their outcomes:

“How can we ensure that ICTs will have a positive impact on human welfare and that its positive impacts will not be outweighed by the negative ones”¹⁴⁷.

For her then a social approach must be based on ideas about a change in mind-set:

“what extent and how can ICTs serve the people and help to build societies that are more just, democratic and caring”¹⁴⁸.

¹⁴⁵ Ibid. p: 8, 9.

¹⁴⁶ Ibid. p: 9.

¹⁴⁷ Martínez, Juliana. Internet and Socially relevant Public Policies: Why, How and What to Advocate?. In: Bonilla, Marcelo and Cliche, Gilles (Eds). (2004). Op. cit. p: 367.

¹⁴⁸ Ibid. p: 365.

These general assertions extend social approaches which have emphasized the need to overcome hegemony and techno-mercantile ideas and replace them with a vision where the central axis is human beings, their rights and their fundamental necessities. Social research situates technologies and infrastructure as sources for human development, but not as goals unto themselves. In other words, technologies must support broader areas of development: education, health, economy, environment, democracy, etc.

“Digital barriers”, within this perspective, must be understood as an expression and result of broader social barriers, and thus, it is necessary to look at them also considering other gaps: cultural, political, social, educative, gender and economic which are the principal causes of marginalization.

These social approaches have emerged through different “social practices” in Latin America and have become more focused during the 1990s with the advent of the Internet. Equally many of the features of dominant approaches have been developed as a result of the participation of organizations of the civil society in international discussions, for example, the World Summit on the Information Society (WSIS)¹⁴⁹.

León, Burch and Tamayo describe, for example, how civil society organizations are actively participating in the construction of a new social vision that tries to build a more realistic and just “information society”. They explain that although civil society organizations are the third actors of the Summit after government and private sectors, their participation has established a dynamic of interaction and coordination within several civil society organizations which is a positive aspect in the process of the construction of a social perspective of an “information society” not only for Latin America but for all “South” countries.

Some of the issues of priority for this type of social approach were summarized at the World Social Forum¹⁵⁰:

¹⁴⁹ Summit web-site: <http://www.itu.int/wsisis/index.html>

¹⁵⁰ “The World Social Forum (WSSF) is an annual meeting held by members of the alternative globalisation movement to coordinate world campaigns, share and refine organizing strategies, and inform each other about movements from around the world and their issues. It tends to meet in January when its ‘great capitalist rival’ the World Economic Forum is meeting in Davos, Switzerland”.
http://en.wikipedia.org/wiki/World_Social_Forum

"Sustainable development: the equal information society must be based in the sustainable economic and social development and in the justice of gender. The forces of the market themselves do not allow to achieve these objectives.

Democratic governance: ICTs must contribute to democratic governance and they have to promote citizen participation. Transparent governmental structures must render accounts, and they must be established in the local, national and international levels.

Alphabetization, education and research: only a citizenship educated and informed, with access to the media and the results of a pluralist research, can participate and contribute to knowledge societies.

Human rights: the actual frame of human rights must be applied and integrated to the information society. ICTs must be used to promote the respect and the reinforcement of the rules related with the human rights of people.

Knowledge as a world-wide patrimony of the humanity: the common global knowledge and the public domain constitute the angular stones of the public general interest. They must be protected, expanded and promoted.

Cultural and linguistic diversity: the recognition of cultural development as an evolutionary and live process, linguistic diversity, cultural identity and local contents must be not only preserved but also actively encouraged.

Information security: matters related with information security must not attempt to infiltrate private life and the free right to communicate, under the cover of ICTs"¹⁵¹.

In spite of the fact that Latin American governments have been weakened, predominately by "North" neo-liberal economic pressures, authoritarianism and corruption, which has led to

¹⁵¹ GTCT. *Siete Exigencias: Principios Prioritarios Propuestos por la Sociedad Civil*. February, 2003. Available at: www.movimientos.org/foro_comunicacion/

economic and social crises, many of them are looking for mechanisms and strategies to improve and development their societies and consider ICTs within broader social needs.

ICT-use and appropriation, thus, has been seen for governments as a way to improve societies and they have attempted to carry out, sometimes with difficulties, some national ICT pilot programs and projects.

According to González-Manet, however, one of the challenges that Latin American governments confront to incorporate ICTs, is not only the transfer of technologies or the industrial commercial strategies, but the development of coherent public national policies that can guide ICTs through national social agendas:

“These policies not only must stimulate the national and regional independent production and implementation, but also they need to consider the political, cultural, social and educative phenomena to preserve identity and sovereignty”¹⁵².

Bernardo Sorj, a Brazilian researcher, argues that the incorporation of the so-called “information society” by Latin American countries depends on the capacity of governments to develop national strategies and agendas which consider ICTs beyond ICTs and digital divides. This means considering also national social problems such as poverty, social inequality, illiteracy, development, etc. He points out further that, although governments are the main actors to guide ICT strategies and processes of ICT incorporation, in the sense that they can designate economic resources and to take political decisions, this is not easy because it is a local and international complex political field:

“Locally, NGOs and civil society have developed different mechanisms of representation and practice, but in many cases their participation are not considering national interests that goes beyond the simple digital implementation. There are many national problems that need to be overcome first, in order to carry out a national social agenda that includes ICTs. Thus, I think that civil society can represent as well the interest of a specific group

¹⁵² González-Manet, Enrique. Paper: Nuevas Formas de Comunicación y Cultura: ¿Cómo Enfrentar las Nuevas Tecnologías?. Telos number 38. 1994. http://www.quadernsdigitals.net/index.php?accionMenu=hemeroteca.VisualizaArticuloU.visualiza&articulo_id=6267.

that carry out short term practices without any real impact in a national sense ... Internationally, there are many situations that need to be discussed and overcome, one of these is the interest of many business companies and transnationals that want to impose their rules ... my point in relation to ICTs and development of countries is to look specifically at the differences of each country in order to create a broader national strategy ... Nobody is going to tell Brazil how to develop an ICT national agenda because we have a specific reality, of course our government will have to negotiate in an international sphere together with other Latin America countries ..."¹⁵³.

3.4. CONCLUSIONS TO MY APPROACH

Conceptual and practical features that have characterized this theoretical framework have pointed out the need to combine approaches within the analysis of my case studies. I will draw therefore on an arrangement of perspectives and issues: access, policies, political support, training, networking, cultural aspects, and economic issues.

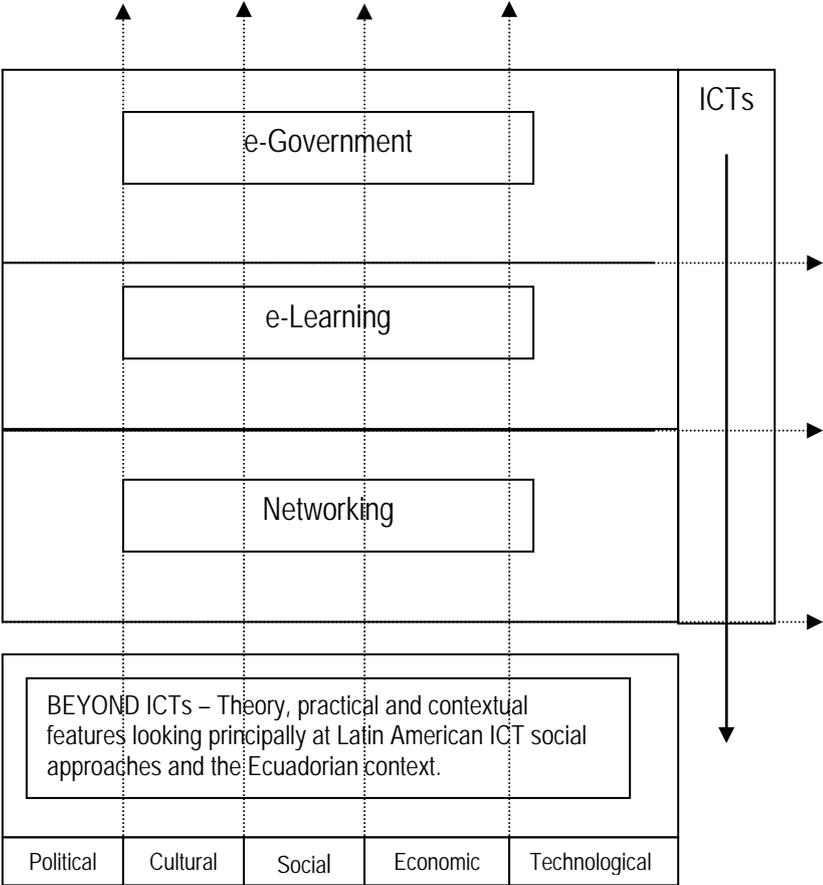
A main argument for this is that ICT- use and appropriation is not a cause but a manifestation of the current social, economic, political, cultural contextual features.

On the basis of this, I have considered that my approach is a matrix that can be explained as follows:

I have divided the analysis in three main (e) divisions: e-Government, e-Learning, and Networking which refers to the particularities of these three divisions, principally ICT-implementation. As I argue, however, beyond ICTs, there are specific contextual, theoretical and practical features looking particularly at Latin American ICT social approaches and the Ecuadorian context.

¹⁵³ Sorj, Bernardo, Brazilian researcher. Un-published conference paper. Incommunicado Conference. Amsterdam. June, 2005.

GRAPHIC



CHAPTER FOUR

ECUADORIAN CONTEXT AND ICT-APPROPRIATION

4.1. INTRODUCTION

In Chapter 3, I described Latin American ICT research with a focus on issues that will be important for the analysis of the Ecuadorian cases in the next chapters. In spite of the fact that the Latin American historical context characterized the Ecuadorian reality as well, there is a need to add some specific features of the Ecuadorian context as a background for the case studies. I present also a brief history of the development of ICTs in Ecuador.

This chapter is divided into four sections. The first section is the introduction and outline of this chapter. The second section focuses on the economic and political crisis in Ecuador during recent years. The third section describes a brief history of the development of ICTs in Ecuador. The fourth section presents a brief history of ICT-appropriation within national and local Ecuadorian governments as a backdrop for Chapters 5 and 6.

4.2. CONTEXT

4.2.1. Socio-economic crisis

According to Larrea, towards 1982 the conditions that led to the 'oil boom' in Ecuador were exhausted:

"The country, overwhelmed by a heavy external debt, affected by the adverse prices of their export products, and by the negative effects of the 'Dutch disease'¹⁵⁴, initiated its transition toward a new economic historical period, under a structural adjustment strategy and promotion of exports, inspired by the rules of the 'Consensus of Washington'¹⁵⁵¹⁵⁶.

¹⁵⁴ "Dutch disease" (economic term): it is a 'disease' that deteriorates the production of goods through an economic adjustment. Acosta, Alberto. Article: ¿Un País Enfermo por Vocación? Revista Economía. February, 2004. Available at: http://www.lainsignia.org/2004/febrero/econ_034.htm

¹⁵⁵ "Consensus of Washington" is today a very popular and often pilloried term in debates about trade and development. It is often seen as synonymous with "neoliberalism" and "globalization". As the phrase's originator, John Williamson, says: "Audiences the world over seem to believe

According to Larrea, new economic policies were brought in during the first half of the 1990s: these liberalized the type of change (currency) and interest rates, dismantled its tariff protection, opened to its markets, eliminating subsidies and other distortions in its relative prices, and, partially deregulated the financial system and the labour market. Unfortunately the economic results were not the awaited ones.

Larrea:

“Towards 1998, a limited group of primary or barely elaborated products (petroleum, banana, coffee, cacao, shrimps, other products of sea and flowers) continued contributing with approximately 90% of the export, and the only successful non-traditional product of certain magnitude were flowers (5% of the local export). To the small diversification of exports, a bulky external debt was added that ascended to 16.400 million dollars, and whose service has represented to the Ecuadorian State near 10% of the GNP between 1995 and 2002”¹⁵⁷.

The low diversification of Ecuadorian exports, and the predominance of primary goods and their limited dynamism reflected structural problems of competitiveness that have affected the Ecuadorian economy throughout its history.

In recent years also Ecuador has experienced economic crisis, declining oil prices, banking sector mismanagement, political instability, and social unrest. It was the first Latin American country to officially sacrifice its national currency and to impose the US Dollar as legal currency to overcome the crisis.

According to the Ecuadorian economist, Alberto Acosta:

“between 1995 and 2001, the number of poor increased from 3.9 to 9.1 million, from 34% to 71% in percentage terms. Extreme poverty has more than doubled its figure, from 2.1

that his signifies a set of neoliberal policies that have been imposed on hapless countries by the Washington-based international financial institutions and have led them to crisis and misery”. Available at: www.cid.harvard.edu/cidtrade/issues/washington.html

¹⁵⁶ Larrea, Carlos. *Pobreza, Dolarización y Crisis en el Ecuador*. Ediciones ABYA-YALA. Quito-Ecuador. 2004. p: 23.

¹⁵⁷ Ibid.

to 4.5 millions, a jump from 12% to 31%. The previous figures come together with a major concentration of wealth. Whereas in 1990 the poorest 20% of the population accounted for 4.6% of the total income and in 2000 received less than 2.5%, the richest 20% increased their percentage from 52% to more than 61%. And by the turn of the century more than 500.000 people (more than 10% of the working population) will have fled the country ...¹⁵⁸.

To which can be added:

“that almost 80% of the working population labour under precarious conditions or are unemployed: underemployment concerns around 60% of the working population, unemployment affects 9% and more than 10% are found outside the country as emigrants”¹⁵⁹.

In recent years an estimated of 300.000 Ecuadorians had left the country (mainly for Europe, in particular Spain and Italy)¹⁶⁰.

Larrea does not point a positive picture of the country:

“Ecuador, in spite of the wealth and diversity of its natural resources, is one of the countries with most poverty and social inequity in South America. Its prolonged economic stagnation, within a context of commercial openings and globalization, reflects structural problems of international competitiveness by its weak human capital, a deficient educative system, the institutional weakness and a lack of infrastructure”¹⁶¹.

4.2.2. Socio-political crisis

Serious political problems have increased and political parties find themselves in comparable states of disarray. According to 2002 polling data:

¹⁵⁸ Acosta, Alberto. Article: La Deuda Externa de América Latina: Origen, Evolución y Alternativas de Solución. Centro Andino de Acción Popular – Ecuador Debate, number 45. December, 1998.

¹⁵⁹ Ibid.

¹⁶⁰ http://www.europarl.eu.int/delegations/noneurope/parlatino/fernandes_en.pdf

¹⁶¹ Larrea, Carlos (2004). Op. cit. p: 45.

“only 6% of the population support political parties, and a meager 11% have faith in the Congress. Ecuador’s multiparty system is one of the weakest in Latin America with only 28% of Ecuadorians believing that democracy is able to solve their problems”¹⁶².

In addition to this political weakness, regionalism and ethnicity have been the main fault lines of Ecuadorian politics. According to José Antonio Lucero¹⁶³,

“Ecuadorian politics has also revolved around the divisions among the country’s three geographic regions: the coast, the Andean highlands (or sierra), and Amazonian lowlands the division between coast and sierra remains the major regional cleavage, as economic power is concentrated in coastal Guayaquil’s agro-export and banking sectors, while political power is centralized in the highland capital of Quito. Ecuadorian regionalism permeates public life ...”¹⁶⁴.

The merging of the indigenous organizations with Ecuadorian politics, in spite of being positive, has also destabilized the political system:

“The massive marches, blockades, and protests that became known as the June 1990 ‘levantamiento’ (uprising) marked the dramatic re-entrance of indigenous people onto the national stage of Ecuadorian politics. During the past decade, CONAIE-led protests have blocked the Pan-American highway on an almost yearly basis and made inter-provincial travel impossible, forcing governments to negotiate on the institutional structure of the state ...”¹⁶⁵.

The strength and discontent of the indigenous people in Ecuador again came to the attention of other social groups, on January 21, 2000, when organizations of indigenous peoples and sections of the Ecuadorian military capped weeks of national protests with a coup against the government

¹⁶² Lucero, José Antonio. *High Anxiety in the Andes: Crisis and Contention in Ecuador*. Journal of Democracy 12.2. National Endowment for Democracy and the Johns Hopkins University Press. 2001.
http://muse.jhu.edu/journals/journal_of_democracy/v012/12.2/lucero.html

¹⁶³ Ibid. Lucero, José Antonio. Doctorate candidate in the Department of Politics at Princeton University.

¹⁶⁴ Ibid.

¹⁶⁵ Ibid.

of President Jamil Mahuad. The president had announced a plan to dollarize the economy as part of the “neoliberalism” reforms.

This was the second time in three years that a democratically elected president was ousted before finishing his term. Abdalá Bucaram had been deposed by the Congress in 1997 on the ground of “mental incapacity”. In Mahuad’s place, an army general, the president of the CONAIE, and a former head of the Supreme Court installed themselves collectively as a government of “national salvation”. This “triumvirate” lasted only a few hours, as General Carlos Mendoza, under heavy international pressure, abandoned the other two members of the junta and handed over authority to Mahuad’s vice-president, Gustavo Noboa.

“A year later, Noboa remained president, but 2001 began much as had 2000, with thousands of indigenous protesters paralyzing the nation’s roads in protest of the same set of neoliberal policies that Mahuad had sought to implement. This time, however, the armed forces were on the side of the state, not society. Employing greater repressive force than had previously been used in this protest-prone but usually nonviolent country, the government sought to quell the demonstrations. This strategy proved ineffective, however, and the state found itself negotiating with indigenous groups that displayed both organizational might and broad national and international support”¹⁶⁶.

From 2002, the new political situation with Lucio Gutiérrez as president deteriorated also due to his abuse of authority:

“Gutiérrez was elected with backing from left-wing parties. Once in office, he opted for orthodox economic policies, causing his backers to desert him. But his real problems began last November (2004), when the conservative Social Christian Party (PSC in Spanish) moved into opposition, backing a specious effort to impeach him”¹⁶⁷.

To defeat this, Gutiérrez forged a new alliance with two retrograde populist groups:

¹⁶⁶ Ibid.

¹⁶⁷ Global Agenda. Article: *A Coup by Congress and the Street*. April, 2005. Available at: http://www.economist.com/agenda/displayStory.cfm?story_id=3893731

“One is led by Abdalá Bucaram, a former president who had fled Panama to escape corruption charges. The price of their support: the dissolution of the Supreme Court, dominated by the PSC, and its replacement with one sympathetic to the new alliance”¹⁶⁸.

Opposition outrage intensified in March 2005, when the new court’s president granted pardon to the committed crimes by corrupted ex-governors and bankers, which provoked popular protests mainly in Quito (the capital), calling on the President to go.

According to Luna Tobar, there were also other structural reasons for the deep social crisis that is affecting Ecuador: the dominant classes disputing institutional spaces; the agreements related with the sign of the Free Trade Agreement (TLC in Spanish); the foreign occupation of the military North American Base of “Manta”; the consolidation of the neoliberal model; and the consequences of the North American geopolitical intervention:

“The crisis demonstrates the limits of the current democratic model that is based in corruption, in the lack of spaces of social participation, in the client and populist politics and in the violence and non-tolerance of all critical expression”¹⁶⁹.

The political crisis, according to Burch, became more serious in Ecuador on April 15, 2005:

“when president Gutiérrez announced that he was dissolving the Supreme Court – for the second time in four months -, and imposing a state of “emergency” in Quito, suspending the constitutional liberties and arranging that the Armed Forces control and maintain order, arguing that social protests would have altered the internal order. This situation caused the immediate rejection of several sectors of the population and most of the political sectors, through mobilizations and several thousand protesters around Quito ...”¹⁷⁰.

On April 20th 2005, Gutiérrez was ousted by Congress and street protest. Alfredo Palacios, the vice-president assumed the Ecuadorian presidency.

¹⁶⁸ Ibid.

¹⁶⁹ Luna Tobar, Luis Alberto. Latin America in movement. Article: Carácter y Salidas a la Crisis en el Ecuador. ALAI. March, 2005. Available at: http://www.alainet.org/active/show_text_en.php3?key=7843

¹⁷⁰ Burch, Sally. Article: Quito: Desobediencia Civil. ALAI. April, 2005.

This brief socio-economic and political context, bringing the reader up to date to 2005, is important context for the analysis of ICT-appropriation as contextual features have been determinants in all ICT initiatives or projects. For example, in some e-Government case studies, political crisis has made it difficult to carry out and to give continuity to e-Government programs and initiatives.

4.3. BRIEF HISTORY OF THE DEVELOPMENT OF ICTS IN ECUADOR

The development of ICTs in Ecuador is related to old and new media. Radio in the Ecuadorian context has played an important role in the creation of new media networks. I will describe in more detail, however, the development of new media, principally the Internet.

Radio

Some mention needs to be made about radio as it was, and still is, an influential medium for communication and learning. The *Ecuadorian Peoples and Educative Radios Coordinator* (Coordinadora de Radios Populares y Educativas del Ecuador – CORAPE in Spanish¹⁷¹) founded in 1988 is the largest network of community radios in Ecuador, linking 40 radio stations across the entire nation. CORAPE's goal is to strengthen the community radios through technical support, training and information resources in order for them to better support social development and social participation.

The network of CORAPE's associated radio stations covers 40 per cent of the Ecuadorian population and 60 per cent of the rural population. Eight of the radio stations use Kichwa (Quichua) as the main communication language, and they are managed by indigenous people. Five radio stations are located in the Amazonian region. The rest are distributed both in rural and urban areas.

CORAPE is currently trying to develop an electronic communication network, a project of on line mechanisms and virtual spaces of cooperation between the radio stations in order to exchange information resources, coordinate actions and promote citizen participation and communication.

¹⁷¹ More information: <http://www.ecuanex.net.ec/corape.htm>

Internet

The development of ICTs, principally new media, in Ecuador is closely linked to the development of the Internet globally in the 1990s. Ecuador started to use Internet services in the beginning of the '90s, thanks to the initiative of the private sector (Pacific Bank) and of technicians who foresaw the benefits that Internet would procure for the country.

Between 1990 and 1991, Pacific Bank created *ECUANET*, the first Internet Service Provider (ISP). Ecuador became then the second Latin American country (after Chile) to have access to the Net¹⁷². At the same time, a group of Non Governmental Organizations (NGOs) and academic entities promoted the creation of *INTERCOM-Ecuanex* with the objective of creating an electronic communication tool for developmental organizations.

According to Roberto Roggiero, ex-manager of *INTERCOM-Ecuanex*,

“during the first half of the '90s the number of developmental organizations that started to use electronic mail for their communication requirements was significant. The sole *Ecuanex*, in 1995, boasted of approximately 300 NGOs using its system”¹⁷³.

In the second half of the 1990s, important development and extension at the users, providers, and applications level took place.

“The Internet converted itself into an attractive service for the private sector, and a source of information for the personal user”¹⁷⁴.

According to Balarezo, the *Ecuadorian Association of Suppliers of Added Value and Internet* (AEPROVI in Spanish¹⁷⁵) was created to defend the rights of the Internet Service Providers (ISP) and to help the development of the country through Internet.

¹⁷² “Paradoxically, a decade later, Ecuador presents a density of Internet users five times less than the average of all American countries, and the lowest penetration level of the Andean Nations’ Community”. Report on Human Development in Ecuador, 2001. *The Information and Communication Technologies for Human Development*. United Nations Development Programme, 2001. p: 41.

¹⁷³ Roggiero, Roberto ex-manager of INTERCOM-Ecuanex. Interview in Quito. April, 2003.

¹⁷⁴ Roggiero, Roberto and Suquilanda Manuel. *Sustainable Management of Production and Commercialization Systems/Information and Communication Technologies in Ecuador*. Quito, May 2003. p: 28.

¹⁷⁵ <http://www.aeprovi.org.ec>

“AEPROVI has realized some investments to build up the Nap.ec in 2000. Actually, it functions in two nodes located in Quito and Guayaquil, the national traffic that goes through the nodes of Nap.ec is of 80% and the following ISPs are connected: Accessram, Bellsouth, Porta, Impsat, Ecuonet, Puntonet, Telconet, Barinver, Andinanet (in process), Espoltel y Satnet Actually, there are more than 100 ISP permissions, but there are only 20 ISP working”¹⁷⁶.

The phenomenon of cyber-cafés, as well, at the end of the nineties and the beginning of the new century, meant an effective alternative in access to ICT. This phenomenon, which extended rapidly to different cities of the country, was due in part to the intense process of international migration from Ecuador in the last few years. Cyber-cafés¹⁷⁷ have reached isolated places of the country, enabling a communication through the Internet for users who don't own a phone line and don't have money to pay for a permanent service.

4.4. BRIEF HISTORY OF ICT-APPROPRIATION WITHIN NATIONAL AND LOCAL ECUADORIAN GOVERNMENTS

This is a brief introduction of ICT-appropriation within national and local Ecuadorian governments. In the next two chapters (5 and 6), I will offer a detail analysis of a selection of government ICT initiatives.

In the last years, national and local Ecuadorian governments have begun to incorporate ICTs in their working plans and in the concrete initiatives of some of their governmental institutions.

According to the Report on Human Development carried out in Ecuador in 2001 on ICTs, which mention also e-Government in Ecuador,

“many governmental entities are exploiting now the potential that Internet offers ... many of them have established web-sites, through which offer information regarding their

¹⁷⁶ Balarezo, Francisco. Report view: [El Internet en Ecuador](http://www.nsrc.org/db/lookup/ISO=EC). Dec, 2003. Available at: <http://www.nsrc.org/db/lookup/ISO=EC>

¹⁷⁷ More information: <http://www.conatel.gov.ec>

functions, activities, plans and programs ... such as the Central Bank of Ecuador, Ministries, National Institute of Statistics and Census, Tax Office, among others¹⁷⁸.

Other public institutions have been equipped with new ICT infrastructures and have carried out digital training programs at the interior of their entities with their workers. These initiatives, as the report suggests, have been carried out as part of "modernization programs" where institutions have renovated old technological infrastructure.

ICTs use, although implemented in a few governmental institutions, has been incorporated in less extended form within a concrete national e-Governmental plan or program. According to Jijón,

"it is necessary to carry out an e-Government program coming from the State, concretely from the Executive Function, which is not only oriented to the development of on-line public services or technology renovation, but toward the development of a broader e-Government program where we can incorporate Ecuador to the so called 'information society'¹⁷⁹.

ICTs have been extended to select e-Government programs and initiatives developed by national and local governments. The *National Agenda for Connectivity (NAC*, described in detail in the following chapter), for example, is one of the national e-Government programs developed by the State in order to extent ICT-use within government institutions, and in Ecuadorian society in general. It hasn't, however, been successful, and I discuss the assumptions and limitations of this program in the following chapter.

Local projects are also beginning to emerge. In 2004, the local e-Government program of the Municipality of Guayaquil was developed. Jaime Nebot, the Major of the Guayaquil municipality, describes the e-Government process and the goals expected:

"We want to design strategies to develop projects that implement the council's vision with respect to the municipality services that we offer to the community. We are going to use

¹⁷⁸ Report on Human Development, Ecuador 2001. Chapter 14: *The Electronic Government*. United Nations. Quito. 2001. p: 187.

¹⁷⁹ Jijón, Francisco. Head of the Projects and Strategic Futurology Unit of the Municipality of Quito. Interview in Quito. May, 2003.

Internet as mass information media, searching efficiency and transparency to the processes related with our services”¹⁸⁰.

In 2005, according to the Ecuadorian Corporation of Electronic Commerce (CORPECE in Spanish) Ecuadorian e-Government has begun to be a reality. Not as a State program, but through some concrete initiatives related with governmental institutions: the custom office, the social security, the tax office, and the central bank, which are offering limited on-line services.

“These institutions are providing information and basic interaction with the State proceedings; although there is not a central policy and coordination of the national government, these institutions are incorporating ICTs ...”¹⁸¹.

One of the successful initiatives has been the *Internal Income Services (SRI – Tax office)*¹⁸², which I analyze in the following chapter.

In the following chapters (5 to 9), I analyze a set of case studies in Ecuador. As I mentioned in Chapter 1, my approach within this study concerns three main areas: government (e-Government), education (e-Learning) and non-profit organizations within civil society (Networking). I explore each area looking particularly at case studies through a series of questions and perspectives based on some of the relevant contextual features that are determinants in the development and sustainability of each case study.

¹⁸⁰ Nebot, Jaime. Major of Guayaquil Municipality. Article: [Guayaquil, Más Ciudad a través del Gobierno Electrónico](#). Electronic bulletin: El Informante. CORPECE. July, 2004. Available at: www.corpece.org.ec/informante/05_09_jul_04.htm.

¹⁸¹ Electronic bulletin: El Informante. CORPECE. Article: [Gobierno Electrónico en Ecuador](#). April, 2005. Available at: www.corpece.org.ec/content.htm

¹⁸² More information: www.sri.gov.ec

CHAPTER FIVE

e-GOVERNMENT - FIRST PART

NATIONAL E-GOVERNMENT

5.1. INTRODUCTION

In the previous chapter, I described the socio-economic and political context of Ecuador as a background for the next five chapters.

In the next two chapters (5 and 6), I analyze national and local e-Government programs of Ecuador and Quito through a series of case studies that highlight some of the issues related with ICT-dissemination, use and appropriation. Through an analysis of assumptions and limitations it is possible to bring out not only specific “practical” concerns, but also to go beyond them to a broader analysis related with political systems, democratic participation and social development.

As I mentioned in Chapter 1, my approach within this study concerns three main areas: government (e-Government), education (e-Learning) and non-profit organizations within civil society (Networking). I explore each area looking particularly at case studies through a series of questions and perspectives. Each case has been approached as follows:

a) Background to the project: What are the characteristics of the project? How has it been created? What are the social actors involved in the creation of the project? The background includes the contextual and ICT features through which the case studies have been created as well as issues of sustainability and how and why it has been possible to carry out the project.

b) Assumptions: What are the underlying assumptions about ICTs that have affected the ways in which they have been implemented? These assumptions are varied - from perceptions of technology as drivers of change themselves to concepts of a future such as global access. At

times they are anchored in an understanding of technology and change as a process rather than an end unto itself.

c) Limitations: What are the factors inhibiting successful ICT-appropriation or implementation? These limitations range from issues of access, training, political decision, social gaps and financing, to misconceptions of the underlying principles of, for example, e-Government.

Solutions: What solutions have been sought to work around inherent limitations? Which social actors have been involved in these solutions? Some of the case studies have found a favorable solution to limitations, which are important to consider in order to determinate practically some of the real possibilities that ICTs offer to these three sectors of analysis.

d) Conclusions: What are the main highlights of each case study? These conclusions show some practical and theoretical concerns not only in relation to the case study, but also in relation to some of the theoretical concerns presented in Chapter 3.

This chapter is divided into five sections.

This first section is the introduction, the approach and the outline of this chapter. The second section considers the *National Agenda for Connectivity (NAC)*. This is a national central e-Government program formulated by the State. This case shows up the need to think in broader aspects than technological ones. The limitations discussed within this case reflect, as well, the crisis of representation that the Ecuadorian government suffers due to the continuous economic, social and political crises.

The third section considers a successful national e-Government initiative: *The Tax Office Reform (Servicio de Rentas Internas - SRI* in Spanish) which reflects the possible effect of ICTs on the internal public organization in the Ecuadorian institution. This program which has been successful in increasing channels of interaction and participation between the institution and its citizens. This particular case shows also that ICT-appropriation is not enough in order to change public management. It was necessary to change the organization of this public institution fundamentally in order to reach positive results. In this case, I have explored *limitations* before the public

institution was changed and the *solutions* that they have implemented when the institution changed.

The fourth section focuses also on the *Tax Office*. This time on the web-site of the *SRI* institution which was an important initiative carried out within this institution. This web-site, with broader objectives, shows how ICTs as tools for disseminating information and on-line services are helpful in order to offer better services to citizens although not all Ecuadorians have access to the Internet.

The fifth section considers the web-site of the current national Ecuadorian government: *www.presidencia.gov.ec* part of one initiative of the national government. This case points out the need to look at broader objectives, such as the role that ICTs can play in the construction of a more democratic society. The creation of a web-site for disseminating information, I argue, can be expanded with a strategy that perhaps permits a real dialogue between governments and citizens in order to overcome other limitations, such as political crisis and citizen disquiet.

5.2. NATIONAL AGENDA FOR CONNECTIVITY. STATE E-GOVERNMENT PROGRAM.

a) Background to the project

In August 2001, the National Commission for Connectivity¹⁸³ of Ecuador was created by an executive decree (Nº 1781), as the inter-institutional body in charge of formulating and developing the *National Agenda for Connectivity (NAC)*, which was designed jointly with the National Council for Telecommunications (CONATEL in Spanish).

In May 2002, the 1st Ecuadorian Meeting on ICTs was held, calling on public and private sectors and representatives from civil society for the elaboration of the National Agenda. From this meeting a working paper was developed, and the realization of set objectives and challenges

¹⁸³ "The connectivity presents itself as the antidote of the digital barrier, involving everybody in the adequate use of the Communication and Information Technologies (ICT), under principles of universality and equity. So is defined the Connectivity, as the communication capacity of a society within itself and with its global environment, using jointly telecommunications, and information technologies, having the objective of evolving into an Information and Knowledge Society". Vera, Carlos. Ex-President of the National Agenda for Connectivity (NAC). Interview in Quito. May, 2003.

began. From this first working paper (May 21st – 22nd, 2002)¹⁸⁴, a first study was made on the country's infrastructure regarding access, tele-education, tele-health, on-line government and electronic commerce. Following this, selected projects were designed in each of these areas with their own objectives, goals, strategies, and specific action plans to incorporate them within the *NAC*.

Carlos Vera, now ex-President of the *NAC*, explained in 2003:

“The agenda is a strategy of the national government to modernize the State, applying information and communication technologies to government processes, and to industrial, educative and social sectors. Generally, it is a complete program on which we will develop a structure that has to do with telecommunications, hardware, software, technological platforms and 5 additional pillars: infrastructure-access, e-Government, e-Commerce, tele-education, and tele-medicine”¹⁸⁵.

Despite the creation of the *NAC* in May 2002, it wasn't consolidated as an e-Government program by the government in power at that time (ex-president Gustavo Noboa), mainly “because the government –almost at the end of its mandate- did not show any interest in the agenda”¹⁸⁶. The proposal of the *NAC* program was then reformulated with the new government.

“We are creating a new proposal of ‘integral digital inclusion’ to determine basic public policies. We also hope that the agenda will include two more central themes: digital inclusion and institutional coordination. We also have some working groups to follow the guidelines set by the previous agenda. In fact, without this work from the previous government, we would be starting from scratch, so we shouldn't wait to start from 100%, as it is better to go perfecting something, to give continuity to processes and not to start all over again”¹⁸⁷.

¹⁸⁴ Comisión Nacional de Conectividad. National Agenda for Connectivity. Working paper: [I Encuentro Ecuatoriano sobre las Tecnologías de la Información y Comunicación](#). Quito, May, 2002.

¹⁸⁵ Vera, Carlos. Ex-President of the National Agenda for Connectivity (NAC). Interview in Quito, May, 2003.

¹⁸⁶ *Ibid.*

¹⁸⁷ *Ibid.*

Currently, with the new government (President Lucio Gutiérrez – for the period of 2003/2007), the previous *NAC* was reintroduced and a new document was also elaborated in September 2003, called “Information Society and e-Government National Program”, derived from the previous working paper.

This new document, however, also continues a “paper existence”, with no national government decision to introduce the e-Government program. I have chosen to study it, nonetheless, because it shows some general concerns of how and why this e-Government initiative couldn't continue due to its own limitations and due to contextual features that reflect socio-economic and political crisis.

Some of the goals of the NAC were:

- Overcoming the digital barrier through the generation of strategic plans and investments for access-infrastructure. This involved the design of policies, the development of telecommunication networks, the computer market, and the necessary aspects to use technology as mean of access.
- The national program of tele-education proposed a series of initiatives and projects that were to use ICTs to complement and modernize the methodologies and ways of learning, in formal education, continuing education, and training.
- The national program of tele-health proposed a series of initiatives and projects to use ICTs to offer health services, in prevention, diagnosis, statistics and treatment of diseases including the training of doctors and general public.
- The national program of e-Government proposed a series of initiatives and projects that used ICTs to facilitate that the State be to the service of the citizen in a democratic, efficient and effective form. It is meant to warranty transparency of its acts and the offer of its services: information, proceedings, public contracts, citizen participation. The use of technology is meant to make the relation between the government and citizens easier.

- The national program of e-Commerce proposed a series of initiatives and projects that used ICTs for the incorporation of the digital economy in order to favor productive activities such as: commerce, agriculture, tourism, industry and other sectors.

With this brief background, I will now consider some of what I see as the underlying assumptions about ICTs that shaped this project.

b) Assumptions and goals

Assumptions are important to consider in my study because they show up the perceptions not only about technology but the changes that they can generate.

Assumption 1: ICT implementation transforms the way in which governments and societies work, creating a greater accessibility to services and improving the ways of providing quicker and more certain results.

The general goal of the *NAC*, according to Vera, was to create a dynamic program that articulates ICTs within policies, strategies and projects in different social areas of Ecuadorian society.

Assumption 2: e-Government can create a sharp reduction of costs and time within governmental institutions. Such saving could be invested in more active forms of democratic and participatory citizenship.

Assumption 3: ICTs can redefine the relationship between government and other social sectors from the civil society.

According to Vera:

“the *NAC* program had the intention to have the active and permanent participation of the civil society, the private sector and the public sector because its execution was oriented

by equity and universal principles, through the access of everybody in the national territory"¹⁸⁸.

Assumption 4: ICTs can improve sectors of the society and the development of proposals and a series of other initiatives.

In the next section, I draw out the practical limitations of the project. I will later draw also some conclusions as to how the assumptions themselves were optimistic at best and naive at worst.

c) Limitations and solutions

Limitation: A program elaborated poorly from the beginning

The *NAC* project has been elaborated within a technological determinist vision, which has implied, as their goals stated, issues related simply with ICT-appropriation within government instances and of different social sectors. This technological emphasis, I argue, has put aside other important considerations in order to carry out a broader national e-Government program, which also involves political, administrative, and organizational changes within an appropriate internal public management, and the considerations of broader social need within the entire society.

Vera mentions another problem related to the functioning of *NAC* of who is actually directing the *NAC*:

“Despite the fact that a strategy was established with the formation of a connectivity commission in 2001, its creation didn't help much because the president of the National Commission for Connectivity wasn't a minister and had consequently no power within the previous government. Taking this difficulty into consideration, we hope that the new government is going to change the commission presidency, giving it to the President of

¹⁸⁸ Ibid.

the Republic, and that the President should himself announce the cabinet, with CONATEL (agenda coordinating institution) working as horizontal agent¹⁸⁹.

Limitation: Lack of real political support

The e-Government process in Ecuador is slowly and gradually starting, and even if some government institutions are working on e-Government initiatives, there exists a lack of political support and willingness to encourage and direct concretely an e-Government project.

This lack of interest, I argue, due to little understanding of the issues and to little leadership of strategic institutions to promote e-Government projects, is impeding the increase of an awareness and commitment from State leaders.

As Reilly and Echeberria argue:

“It is clear that the leadership shouldn't only be about the political backing of the president. It also needs a political wisdom to generate a common agenda and a unified direction through clear processes and the simplification of relationships. It also needs a political willingness to arrange the distinct visions in the e-Government agenda, instead of creating an agenda around the people who are supporting a single and determined vision¹⁹⁰.

The *NAC* hasn't had any political encourage and it has been left a side in the last two years. None of the goals presented in the *NAC* have been carried out. The main reason for this is the unstable political governance, which is attempting to overcome basic political crises rather than to carry out other proposals.

Limitation: Lack of political continuity

Bramwell argues in relation to the Ecuadorian e-Government process:

¹⁸⁹ Vera, Carlos. Ex-President of the National Agenda for Connectivity (NAC). Interview in Quito. May, 2003.

¹⁹⁰ Reilly, Katherine and Echeberria, Raúl. El Papel del Ciudadano y de las OSC en el e-Gobierno: Un Estudio de Gobierno Electrónico en Ocho Países de América Latina y el Caribe. APC ORG. January, 2003.

“... it is obvious that continuity is a key factor for these types of projects. In such an unstable country as Ecuador, where the common thing is for one government to dismiss all what was realized by the previous one, there are some factors working against long-term commitments”¹⁹¹.

In the case of the *NAC*, during the last 4 years the program has been changed and re-formulated with new people assigned for new presidents. Ecuador has changed presidents 5 times in 5 years. Although Carlos Vera, ex-president of the *NAC*, remained during almost two whole governmental periods, the program has been left a side within each of the new governmental groups without any real initiative to carry it out.

Only few governmental institutions continue developing their own ICT projects within their institutions: the Central Bank of Ecuador, the Tax Office, among others.

Limitation: Lack of a specific government management and competent leadership

Although the working document of the *NAC* was elaborated with a working governmental group designed for this purpose, there was a lack of qualified personnel to create an integral vision across sectors. In my opinion it makes difficult to raise a program without any knowledge about what is involved in the development of an e-Government proposal within governmental institutions and other sectors of society.

Limitation: Limited incorporation of stakeholders and civil society

According to Vera, in the *NAC*'s goals there was the intention to incorporate some sectors of the civil society in the formulation of the program. Although there were some meetings with representatives of some organizations at the beginning of the formulation of the *NAC*, they were relegated to the role of participants rather than decision-makers.

Bibiana Apolonia argues for the need of such involvement:

¹⁹¹ Bramwell, Hassan. Conectados Magazine. Article: Gobierno Electrónico: Lo Posible y lo Deseable. No.20. Quito. Febrero, 2002. p: 38.

“it is in the relationship between state and society that the major conflicts are found; and changes these relations imply the management of a political state including the people living in that space ... the most important questions should revolve around the type of information required by social movements and by human rights organizations, the resources needed by the population to obtain some necessary information on political activities, the type of relevant political information, the technical assessments that could offer an electronic management to the citizenship”¹⁹².

In other words, the *NAC* proposal will need to turn the concept around of what is needed by civil society not what can be provided.

Limitation: Legislative barriers

In Ecuador, in spite of the existence of some legal frameworks for institutional management, for example the *Law of Transparency and Access to the Public Information*, which demands the publication of information and institutional contents and some laws related to ICTs (such as the e-Commerce laws); there exists a lack of legislation regulating ICTs.

These few laws can't ensure the operational capacity of technological means as there is a need for a series of complementary laws that haven't been adopted yet. At the same time, Bramwell argues, a preparation process to put the laws into practice is needed for the public service including technological training that is nowhere to be found:

“The technology is a bit obvious and what is required is the complicated part. We could talk about options, the government could offer to choose between working through the Internet or behind the counter, but in the case of the invoicing system there is no choice. We need an arsenal of laws, resolutions, public training and civil servant preparation”¹⁹³.

¹⁹² Apolonia, Bibiana. *Argentina: Gobiernos Electrónicos en América Latina: Nueva Forma de Recrear los Espacios Públicos o Nuevos Escenarios de Poder?* Revista de Derecho Informático Alfa-Redi. 2003. Available at: <http://www.alfa-redi.org/revista/data/68-11.asp>

¹⁹³ Bramwell, Hassan (2002). Op. cit. p: 38.

Limitation: Lack of access of infrastructure and connectivity

e-Government can't be conceived without basic infrastructure and connectivity, and even though there are some access and infrastructure projects within the e-Government program, minimal technological infrastructure in the majority of the Ecuadorian governmental institutions doesn't exist, nor, as describe above, the technological training program to incorporate workers into the use of ICTs.

Limitation: Lack of coordination

Despite the fact that the *NAC* was created within of a working group designed for this purpose in one of the governmental periods, it is obvious that there was little planning or strategic promotion regarding projects and direct actions, not only because the process never has begun, but also because there was a lack of coordination between the governmental actors involved in this e-Government commitment.

Castells argues that such coordination is necessary:

“The necessity to link technologies with information not only requires the use of proper technologies to process information, in the sense of proper management and processes capacities, but it is also about relating various elements, various people, and various enterprises, including public administrations to work jointly. Subsequently, the main problem is the coordination of all these elements, and it might be one of the main factors to advance in the e-Government process or not”¹⁹⁴.

Bramwell argues also for the need for coordination between departments and regionally, using South Korea as an example:

¹⁹⁴ Castells Manuel. *Globalización, Tecnología, Trabajo, Empleo y Empresa*. Revista La Factoría No. 7, October 1998. Available at: <http://www.lafactoriaweb.com>

“In South Korea it is possible to complete all the procedures implied by the purchase of land and the construction of a house through web pages. The only requirement is to get a digital user certificate that can be applied to all transactions”¹⁹⁵.

Bramwell continues that the same thing is unthinkable in Ecuador:

“the street numbers in Quito, Guayaquil and some other cities are on computers, but it is not the case with all provinces. Then, to join the processes of one province with another is a huge task, and if there are some projects in distinct provinces which are totally uncoordinated. A town is going to implement an e-Government plan, another town will implement a different one, and the coordination will be a terrible ordeal”¹⁹⁶.

Limitation: Lack of training

Castells argues also for the need for training of assess:

“Another essential component is the education, the educative training not in term of qualifications but in terms of association capacity; the work with technologies is generating tasks including qualifications as well as new management capacities linking education and work”¹⁹⁷.

The *NAC* e-Government strategy should have had as a priority basic technological training at all levels, which was not a current state policy in Ecuador. There exist some factors that have contributed to this education, such as the proliferation of Cyber-cafes and telecentres in which people learn how to use the Internet. The technological training process, however, should be part of a governmental general plan, which has happened in other Latin American countries, such as Brazil where they have created a chain of telecentres in order to train and promote ICTs. I will discuss training initiatives in Ecuador in greater detail in Chapters 7 and 8.

¹⁹⁵ Bramwell, Hassan (2002). Op. cit. p: 38.

¹⁹⁶ Ibid.

¹⁹⁷ Castells, Manuel (1998). Op. cit.

Limitation: Slow process, bureaucratic and scarcity of resources.

The *NAC* consolidation process is slow, bureaucratic is mark by a scarcity of resources. Vera describes here the lack of economic resources:

“We have a signed agreement between state institutions, and the technology to be used was defined; the next step is to take the subject to the highest directive level to ratify the agreement and to find necessary resources, because the sums of money budgets that had supported the previous administrations no longer exist or have been spent”¹⁹⁸.

d) Conclusions

1. *ICT implementation transforms the way in which governments and societies work, creating a greater accessibility to services and improving the ways of providing quicker and more certain results.*

The *NAC* e-Government program, although, it has had the good intention to design some strategies in relation to ICT-appropriation within the Ecuadorian government and some sectors of the society, it couldn't carry out any of its goals because it could not develop broader objectives beyond the technological ones.

The crisis in governance that Ecuador has experienced in recent years has prevented the development of any long term concrete national programs. This is the case, not only with programs related with ICTs, but also other types of projects picking up social concerns.

ICT implementation, undoubtedly, can transform the way in which governments and other sectors of the society work, creating a greater accessibility to services and improving the ways of providing quicker and more certain results within governments, and other sectors of the society through different ICT ways of appropriation. It is not, however, only a matter of ICT technological infrastructure and connectivity, but a matter of other important issues as the case study shows: political support and continuity, competent leadership,

¹⁹⁸ Vera, Carlos. Ex-President of the National Agenda for Connectivity (NAC). Interview in Quito. May, 2003.

public and legislative policies, coordinated work with other sectors of the society, financing, training, public management changes.

2. *e-Government can lead to a sharp reduction of costs and time and such saving could be invested in more active forms of citizenship and democratic participation.* As the case study showed, however, there is a lack of leadership and knowledge and about ICTs that prevents the implementation of a national e-Government program that might bring down costs. ICTs are not “magic solutions”; people need to be trained and acquire knowledge about them in order to find possible ways of appropriation and motivation that increases the likelihood that citizens use them.

There is a need within governmental institutions to have competent people with experience in e-Government themes. e-Government program requires having an interdisciplinary staff with technicians, administrators and social researchers that can built ICT strategies to overcome governmental mistakes and moreover social crisis.

3. *The NAC program was based on was the redefining the relationship between government and civil society sectors in order to build an e-Government plan.* Within the NAC, however, there were not sufficient spaces of dialogue with the participation of other social actors. The NAC was conceived only by governmental authorities.

One important issue within the ICT social approach mentions, according to León, Burch and Tamayo, to the need to consider social and cultural differences of citizens in order to build a more just, democratic and caring society. The role that can be played by many civil society sectors in the construction of ICT initiatives, with more experience implementing and using them, can be a determinant factor in order to develop an e-Government program. In other words, civil society can have more experience in needs than government authorities.

4. *There is an implicit assumption that technology will definitely bring social, economic and human development to many sectors of the society.* Although, the NAC program pointed

out the need for the development of proposals and series of initiatives in order to do that, this implicit assumption prevents them to go beyond.

If we consider that techno-economic characteristics has been one of the perspectives that shaped the “information society”, in the Ecuadorian case, this perspective absolutely needs to be qualified and enhanced by a broader social perspective, considering also many negative factors –e.g. poverty, inequalities, and social lack to mention few - in order to develop comprehensive ICT strategy.

Since the *NAC* was proposed in 2002, it hasn't carried out any of its goals, nor any proposed project. This lack of a concrete action plan with the design of some public policies makes the possibility of ICT-appropriation difficult for others sectors: private, civil society and grassroots instances which need some national ICT policies in order to carry out concrete ICT projects.

There is, for example, no policy related with connectivity, and in this respect, telephone and Internet services are expensive, also for educative institutions which could have a reduce tariff in order to carry out an ICT-appropriation in their schools. Also, connectivity barriers are difficult to overcome, when there is no any public policy that allows the opening up of a competitive telecommunication market, nor better tariffs for low income people and institutions.

“Traditionally the computer development of the Ecuadorian State has met the particular interests and necessities of each of the departments, ministries and governmental entities, but not the national politics emanating from a central level. This situation has generated problems regarding technical, administrative and economic aspects within government instances and consequently in the entire society”¹⁹⁹.

Despite the fact that in 2000 the planning process of the Republic Presidency was initiated, which developed a project called Communication and Information Technologies

¹⁹⁹ Report on Human Development, Ecuador 2001. Op. cit. p: 192.

State Unit (UTICE)²⁰⁰ and that later on the Telecommunications National Council (CONATEL)²⁰¹ designed the proposal of the *NAC*'s, the changes of governments and the discontinuity in the strategies have impeded the consolidation of a state network linking at national level of the different governmental institutions and consolidating a strategic plan of e-Government that concern the develop of public policies in regarding ICT matters.

5.3. TAX OFFICE. "SERVICIO DE RENTAS INTERNAS" (SRI IN SPANISH)

a) Background to the project

Before the "modernization process" of the *Tax Office (SRI in Spanish)*; this institution, previously called *The General Direction of Income*, and part of the Finance Ministry, was facing serious difficulties.

The processes for change started to be executed in January 1999 with the economist Elsa de Mena, who assumed the direction of this entity. According to Hassan Bramwell, one of the assessors of this process her appointment was pivotal:

"When Elsa de Mena took the command of the General Direction of Income (*SRI* in Spanish), she decided to start a new institution almost from scratch. Some of the key aspects of her plans were to eradicate corruption and the lack of technology that existed in the *SRI*, setting a new internal organization, and also incorporating internal and external technological strategies ..."²⁰².

SRI is a technical and autonomous entity in charge of the administration and collection of the taxes. Their basic purpose is:

²⁰⁰ Project in charge of, "on the one hand, to propose policies related to basic standards regarding the transmission of information flows, the management of digital documents, the use of the Internet, the computer equipment, regulations, among other aspects, and, on the other hand, to assess the highest authorities regarding the importance of a State policy or plan related to ICT". Ibid. p: 193.

²⁰¹ More information: www.conatel.gov.ec

²⁰² Bramwell, Hassan (2002). Op. cit. p: 37.

“the diffusion and training of the contributors with respect to its tributary obligations and the attention and resolution of its requests, reclamations and consultations. In the cases of evasion of tributes, it applies the corresponding sanctions according to the law”²⁰³.

Other faculties, attributions, and obligations are:

- “To carry out the determination, collection and control of the internal tributes of the State;
- To prepare the studies respect to reforms to the tributary legislation;
- To know and resolve the petitions, reclamations, and resources;
- To emit and cancel titles of credit, notes of credit and orders to collection;
- To impose penalties;
- To establish and maintain the statistic tributary national system;
- To train to the contributors about information related with their tributary obligations; etc”²⁰⁴.

b) Assumptions and goals

Assumption 1: Technology implementation facilitates public management, offers better services and improves the internal organization of public entities.

This can be seen in the way the *SRI* institution incorporated and updated new technology. It included:

“a solid database with the identification and inscription of a greater number of taxpayers; a quicker and more flexible process to secure the Taxpayer Unique Register (RUC); tax return through digital means, getting rid of paper; the development of an open invoicing system with full Internet characteristics, considered as the most advanced in Latin America; control of tax returns; a network at national level allowing attention to clients in a decentralized manner for all provinces of the country ...”²⁰⁵.

²⁰³ Institutional document: [The SRI Institution](http://www.sri.gov.ec). Available at: www.sri.gov.ec

²⁰⁴ Institutional document: [Creation of the SRI Institution](http://www.sri.gov.ec). Available at: www.sri.gov.ec

²⁰⁵ Report on Human Development, Ecuador 2001. Op. cit. p: 188.

Assumption 2: ICTs allow a clear and quicker government public management through the creation of an information and communication network.

This can be seen in its implementation of a modern and professionalized public administration network that is meant to maintain a responsible and transparent relation with the tax offices around the country and citizens in general.

Assumption 3: e-Government involves delivering services via the Internet, telephone, and community centers.

SRI has improved its services within its offices and through Internet and telephone centers.

Assumption 4: The incorporation of e-Government may lead under the right circumstances, to a new and efficient horizontal and transparent model of public administration and democracy in the public sphere.

c) Limitations and solutions

The first set of "limitations" relate to the limitations inherent before the modernization process. The second set relate to the limitations during and after implementation. The third one relate to a general limitation.

Limitations before the modernization process

Corruption:

Corruption within public institutions continues being one of the most difficult limitations to overcome. In recent years, Ecuador has demonstrated that it is one of the most corrupted countries in Latin America with three presidents' ousted out for this and related reasons.

In the *SRI* institution one of the main reasons to carry out a “modernization process” was to eradicate corruption. In this respect, *SRI* put in place a new management program reducing administrative personnel and updating technological platforms and infrastructure.

In recent years, according to the Economist Vicente Saavedra, the new general director of the SRI, there haven't been cases of corruption:

“This means that *SRI* is seen as a reliable and transparent institution”²⁰⁶.

Limitation: Bureaucracy and lack of coordination

Over-sized and non-functioning bureaucracy within governmental institutions is one of the major limitations for the development of new institutional public management and the development of e-Government national programs. In the *SRI* institution, before the process of change,

“there were approximately 1800 people working, with the process of reformation staff was reduced from 1800 to 60 people from the previous administration. New personnel were contracted by external enterprises”²⁰⁷.

The SRI, as well, adopted new mechanisms of coordination and a controlled national plan with all the SRI institutions around the country. This has allowed generating, not awareness of internal risks, but also, a constant feedback between SRI institutions to improve the tributary process of invoicing, car taxes, managements reclamations, and acquisitions. The main SRI institution, now situated in the capital, Quito, gives supports to the rest of SRI dependencies in the provinces through ICTs.

Limitation: Lack of understanding of new public management

In order to carry out an e-Government initiative, it is important to consider all the elements involved in the design of a new public management program.

²⁰⁶ Saavedra, Vicente. General Director of the SRI. *Annual Inform of Activities 2004*. SRI Institution. Quito, 2004. Available at: http://www.sri.gov.ec/download/pdf/informe_actividades_2004.pdf.

²⁰⁷ Report on Human Development, Ecuador 2001. Op. cit. p: 188.

The *SRI* is promoting hand-in-hand with ICT development new public management, with an effective understanding of the necessary processes of modernization. This has enabled a collection of more taxes, a better control on tax return, a significant reduction of corruption, the implementation of a technological platform, a communication network at national level, the consolidation of a database with all the information, and a decrease in tax evasion.

According to the Annual Inform of Activities 2004:

“the collection of the tributes administered by the SRI in the fiscal year 2004 reached U.S. 3,364.7 millions, which implies a growth of 12.3% as opposed to the year a 2003; and fulfillment of 101.5% of the programmed annual goal”²⁰⁸.

Limitation: Inefficiency of the services

Within public national and local institutions one of the main limitations is the inefficiency of the services. *SRI* was one of the most terrible places in order to get efficient and good services. After its reformation, however, they have developed many mechanisms and strategies to offer better services. One of this has been the development of its web-site. This web-site offers not only tributary information, but also services to the citizens who can also declare their taxes through the Internet. I will discuss this in the next section.

Limitations during and after implementation

Lack of access, infrastructure and connectivity:

According to the Report on Human Development, Ecuador 2001, the *SRI* had several problems which included scarce and inadequate technological infrastructure:

“There was an old technological platform more than 20 years old ...; a data network almost non-existent; servers distributed throughout the whole country without any

²⁰⁸ Annual Inform of Activities 2004. SRI Institution. Quito, 2004. Available at: http://www.sri.gov.ec/download/pdf/informe_actividades_2004.pdf.

planning or control; at least 5 different databases, the applications were very small and not exchanging information between them..."²⁰⁹.

During the process of changes various limitations appeared related not only to structural changes in the internal organization, but also, as Bramwell comments, related to access and connectivity:

"... an e-Government system should use protocols like http, accessible from all software platforms. But we immediately found another problem to be solved: the lack of infrastructure and connectivity. It wasn't a big problem in Quito and Guayaquil, but in the Amazonian and Galapagos cities there are some problems with the connectivity and the quality of the equipment; then the supply of necessary new equipment meant expenses, and also national public policies to get connectivity"²¹⁰.

Within the new process of change computers and latest generation software were obtained, the definition of a technological platform based on a data server was defined, an applications server and a web-server were used, the ORACLE database was standardized, all management processes to have access to taxpayers' information were revised. These improvements, however, are still limited due to the lack of national improvements, as connectivity.

According to Saavedra, Director of the *SRI*, they have been improved the applications and systems:

"we updated some applications following changes in the norms or the request of the users ... also, we have developed a series of applications in the business tributary management to facilitate and to automate the process of control of the contributors. For example: the implantation and diffusion of the declaration of taxes through the Internet ..."²¹¹.

²⁰⁹ Report on Human Development, Ecuador 2001. Op. cit. p: 188.

²¹⁰ Bramwell, Hassan (2002). Op. cit. p: 38.

²¹¹ Saavedra, Vicente (2004). Op. cit.

Saavedra also argues that it was necessary to invest in technology. In 2004, SRI investment in informatics (hardware, software, systems development) has been 10`279. 885 dollars. In 2003 it was 658.263 dollars²¹².

Limitation: An un-informed civil society

One of the goals stated by the *SRI* has been to promote with citizens the diffusion and training of their tributary obligations. To achieve this, *SRI* has developed some strategies and mechanisms: on-line services through its web-site and face-to-face information desks in its offices.

Another strategy is to inform to the citizenship using mass media, newspapers bulletins, press conferences, lobby and other communication strategies to talk about the difficulties of tributary topics, however, although they have developed some strategies, there are still misunderstandings about all the procedures of tributary activities.

Limitation: No personnel and citizen training

ICT-appropriation implies a constant digital training of workers within public institutions. According to the *SRI Annual Report of Activities* for 2004, training is a priority for institutional management. This training has been carried out, not only at the interior of SRI institutions, but also, with public and private institutions and citizens in general, teaching them about the tax system and how to use and fill out tributary forms. People can also go directly to the *SRI* institution to ask for help in order to fill out a form through face-to-face service.

The *SRI* has developed also other strategies for training. Since 2002, it has an institutional agreement with the Ministry of Education to improve the tax-awareness within the educative system.

²¹² Data available at: http://www.sri.gov.ec/download/excel/inversion_informatica.xls

General limitation: Lack of real political support and continuity

One of the main limitations for any e-Government program has been the lack of real political support and continuity, as the *NAC* program showed up. Contrarily, the SRI initiative, had strong political support mainly because the implemented changes in the public institution proved at an early stage that it was successful. It was possible to carry out institutional change with the support of ICTs and the changes of public management.

In the SRI institution, there has been continuity through the same leadership of Elsa de Mena, who has remained in her position during many governmental periods. This has been possible because new authorities have considered her work in their political interest. This leadership, although it has been changed in 2004 by the current government, has allowed continuity in the process of internal changes, adding and re-evaluating new and old strategies.

d) Conclusions

1. *As the SRI institution has showed, technology implementation can facilitate public management and improve internal organization.* As well, through ICTs, it has been able to offer better services for citizens.

Technological appropriation, however, has not implied only to get and update technology infrastructure, but to realize a series of other improvements looking as well at broader and common limitations within public institutions: corruption, bureaucracy, tax evasion. This brings into account that the present Ecuadorian crisis of government within the political system can be improved if public institutions are able to carry out an internal institutional program that deal with the increasing complexity of the national environment and the internal institutional system itself.

The efficient ways of information processing and organization have, in this case, increased the transparency of the political and economic system. The application of ICTs have served to supply more and better information to governors, administrators, representatives and citizens which increases accountability and transparency.

The case of the *SRI* also shows that improving the quality of services can create a sharp reduction of costs and time not only for the entity but for the citizens. Savings, as the result of the reduction of costs, are being invested within the same institution, in order to realize more improvements.

2. *The assumption that ICTs offer a clear and quicker governmental and public management through the creation of an information and communication network may be true under certain circumstances.* One of these is networking on the sharing of information. Another is the need for updating information. An efficient information processing and dissemination process can increase the transparency of the political system. Other social actors and institutions, however, need to be involved in such exchange.

The *SRI* has created an important internal network between the center and some regional offices that allows an efficient form of information processing and extended database. Lack of basic infrastructure and access, financing and costs, however, prevent the expansion of networks in other provinces of Ecuador.

A further assumption is that the e-Government involves delivering services via a variety of sources: the Internet, telephone and community centers. In the case of the *SRI*, they have developed different systems of delivering services which not only use Internet and telephone, but also through traditional information desks in its offices. This situation tells us that there is important to look the variety of needs and the conditions of citizens in order to improve the services of a public institution. The Internet is not the only way to improve services.

In other countries of Latin America, such as Brazil, for example, has been developed a program to inform citizens about tributary matters through other media (radio, spots for TV and the Internet).

3. *The final assumption was that the incorporation of e-Government may lead, under the right circumstances, to a new and efficient horizontal and transparent model of public administration and democracy.* The case of the SRI institution shows that, although there are some political and economic internal and external governmental problems, a well organized program through political and economic decision can improve public institutions making them more transparent.

Part of this transparency comes through regular evaluations. Improved services are apparent through its web-site as is discussed in the next section.

To round out these analyses, I will consider briefly the web-presence of the two institutions under study. I do so because the material on the web is one way in which to understand the assumptions and perspectives on ICTs by the various actors in this study.

5.4. TAX OFFICE – SRI WEB-SITE: *WWW.SRI.GOV.EC*

a) Background to the project

As described above, the SRI has become one of the most successful projects of e-Government in Ecuador.

One of its strategies to carry out some of their goals has been the creation of a web-site, which is one of the most complete web-sites in the governmental sector. This web-site offers not only information related with tributary matters but also some on-line services for citizens, through which it is possible to declare about taxes, to get authorizations for receipts of sale and retention,

or to book consultations.

The home page of the web-site offers general information about the SRI institution, its regional offices, reports, news, laws, statistics, contributor guides, tributary instructions to fill out forms,



consultations, latest news and documents about tributary changes and terms.

One example of the Internet services that this web-site offers is the *System of Authorization of Impression of Sale's Receipts* developed by the private company Vimeworks. According to Vimeworks, it is one of the most advanced systems of tributary services in Latin America through the Internet.

This system allows the user to order tax receipts. According to Vimeworks²¹³ this situation has allowed increased tributary control to a great extent about all Ecuadorian contributors. From March 2005, the system has been improved, and now all the contributors can ask for receipts through Internet, which, according to Vimeworks, makes the process easier.

b) Assumption

Assumption 1: Offering updated information about tributary matters and on-line services for all citizens improves the tributary system and to obtain tax declarations and payments on time.

c) Limitations and solutions

Limitation: Lack of connectivity

Although, all citizens can access the *SRI* web-site, the problem continues being how many citizens are able to get connectivity in order to gain information and pay their taxes in a simple way.

d) Conclusions

1. *The SRI web-site offers tributary information and on-line services to citizens in order to favor the tributary culture in the Ecuadorian society. This mechanism has made it easier for many citizens and companies to pay taxes and get updated tributary information about their obligations.*

²¹³ More information: http://www.vimeworks.com/cl_gob.html

The *SRI* web-site allows transparent transactions between citizens and the State. One of the principals of good governance, powerful ways of combating corruption is by conducting transactions openly and with public knowledge of the rules and criteria applied.

Although this web-site is a good initiative, “digital barriers” are preventing the use of it for most of the citizens who do not have access or sufficient skills in order to use on-line services.

Contrarily to the *SRI web-site*, the next section discusses the national government web-site which has been developed as an isolated initiative within the presidency. This placement has meant that the general government web-site does not provides information from all public sectors. It offers instead party political information about the current presidency. This web-site differs with the *SRI web-site* which has been created in a way that improves service and offers important information.

5.5. NATIONAL GOVERNMENT WEB-SITE: *WWW.PRESIDENCIA.GOV.EC*

a) Background of the project

One of the few initiatives carried out as part of government has been the design of a web-site of the current presidency: *www.presidencia.gov.ec* (April, 2005-2007). This web-site is sustained by the National Secretary of Communication.

The home page offers a succinct map of the site, with information that is updated daily and takes the form essentially of a press release. The other pages contain static information, or data that are updated less frequently. Also, the home page is presented as a kind of entry portal, with a series of links. It is divided with the following areas: a digital newspaper with different information related with the current economic, political and social situation of Ecuador;



the presidential agenda and activities; some reports; and general information of a few working groups at the interior of the presidency.

It includes also a section with links to the ministries and secretaries. Here there is a short presentation of each minister and ministry and offers a link to their own web-sites. There are areas on the Ecuadorian Constitution and the Ecuadorian map, flag and hymn. There is a link related with the curriculum vitae of the president, vice-president, first lady and other presidents of Ecuadorian history; and in this section there are photo galleries of the president.

The site provides more complete information through its links to the Management System for Democratic Governance (SIGOB), the Integrated System of Financial Management, the Information System for Planning (ODEPLAN), and the Management System for Public Finances (MEF).

b) Assumptions and goals

I begin this section also by drawing out an underlying assumption behind this project which I return to in the conclusions.

Assumption 1: Technology improves easy and free access to information and democratic participation.

The goal for the creation of the web-site was to convert this into as a source of governmental information through the Internet. It was to be actualized daily with news on governmental activities and the presidential agenda. The aim then was a democratic one to keep Ecuadorian citizens well informed about governmental activities²¹⁴.

²¹⁴ www.presidencia.gov.ec

c) Limitations

Limitation: Limited idea of what a government web-site can be

Even though this web-site is a source that offers government information, in terms of volume of information and interactivity, this site offers little information and no possibility of interactivity, which differs with some of the concerns of e-Government in the way that the democratic participation of the citizens must provide a constant and regular feedback to the government authorities in order to be aware about their opinions and needs.

This web-site has been conceived, in my opinion, as “propaganda” of the presidency, with no possibility for the exchange of opinions. There is no real interactivity.

Limitation: An isolated concrete initiative

This example shows how Ecuadorian politics and governments have been characterized, as mentioned previously as in permanent discontinuity. e-Government programs have been developed as isolated initiatives within individual of every government sectors and periods.

d) Conclusion

1. *A web-site can be a good initiative not only to offer easy and free access for information but also to assemble and disseminate citizen expression and public opinions that guarantee a better democracy.* If citizens can participate interacting within a friendly web-site, they can be partnership between the governed and governors, negotiating lines of responsibility within public decisions. Of course, representation cannot involve extremely large numbers of people in decisions, but at least they can provide feedback information to make governments adopt intelligent choices considering the needs and ideas of its citizens.

Internet can promote democracy only if citizens can have equal opportunities of access and use, which is not the case of the Ecuadorian reality where few people have access.

This chapter considered two main initiatives: the *NAC* – primarily a policy program which has not proven sustainable- and the *SRI* – initiative which called for greater transparency and a thorough review of public management systems. It also offered a brief analysis of the websites of two government institutions. In the next chapter I will round out this study of e-Government by adding some local initiatives carried out by the Municipality of Quito.

CHAPTER SIX

e-GOVERNMENT - SECOND PART

LOCAL E-GOVERNMENT

6.1. INTRODUCTION

In the previous chapter, I argued that a national e-Government program or policy was as yet difficult to create as there has been, and still exists, a crisis of government within the Ecuadorian political system that prevents implementing long-term programs. Political support, lack of interest on ICT matters, little coordination within public institutions are also some of the detrimental reasons. The “successful” tax office *SRI*, however, developed an ICT program that included not only a technological reform, creation of a network, and the development of a web-site, but an internal organizational public management change which has changed completely the image of this institution within the public system and amongst citizens.

In this chapter, I discuss a local e-Government program called *Quito Digital* developed by the municipal government of Quito. I will consider some of the concerns of the previous chapter, and I will add new ones looking specifically at some of the initiatives within this program.

This chapter is divided into five sections.

The first section is the introduction and outline of this chapter. The second section presents the local e-Government program called *Quito Digital*. This program, although it has developed some goals and objectives in order to incorporate ICT within the institution and the city of Quito, is also predominately on “paper”. This situation brings into consideration new issues such as internal coordination, strategic alliances and cooperation to mention a few. Moreover, it sets new concerns about the role that local governments have within a society that is in crisis, where there is a need to look at citizens as the main actors and generators of change.

The third section explores the local municipality web-site: www.quito.gov.ec that was the first local initiative of ICT-implementation that compiles and disseminates information related with the local government. This web-site offers, as well, some on-line services in order to improve proceedings within municipality offices and to offer better services to citizens. This initiative intends to promote a more efficient and effective local government reducing bureaucratic proceedings and making governmental services more transparent.

The fourth section presents another project of the *Quito Digital* program called *Cibernarium* which is the first ICT program related with digital training for all citizens. This program is being developed with external cooperation of the @lis: Alliance for the Information Society²¹⁵ program of the European Union. This project, based on the Cibernarium project of Barcelona, focuses on ICT motivation through videos, discussions panels, and TV programs. In my analysis, this project points out the need to develop a local strategy from the local government that allows them to take advantage of this "foreign" project adapting it to a local reality and developing it in other directions.

The fifth section offers a set of conclusions for Chapters 5 and 6 looking in depth at what the set of cases highlights - practically and theoretically.

6.2. QUITO MUNICIPAL E-GOVERNMENT PROGRAM: *QUITO DIGITAL*

a) Background to the project

The first document about the e-Government Program in the Quito Municipality was elaborated by the Metropolitan Computer Department in September 2002. This document picks up on a previous study about the municipality and the necessities to incorporate ICTs to the different municipal departments. Even though it was an initial document, it was, I argue, very poorly elaborated and, subsequently, similarly to the NAC, it did not lead to a concrete program.

²¹⁵ @lis, Alliance for the Information Society: "a program of the European Commission aiming to reinforce the partnership between the European Union and Latin America in the field of the Information Society. Its objectives are to establish dialogue and cooperation on policy and regulatory frameworks in key areas and to boost interconnections between research networks and communities in both regions". Available at: http://europa.eu.int/comm/europeaid/projects/alisis/index_en.htm

In August 2002, through the Strategic Prospective Unit of the Quito Municipality, a working team to formulate an e-Government program was formed. Francisco Jijón, head of this Unit, describes the first steps:

“The Municipality of Quito aimed to create an integral program for the city of Quito, through different strategic alliances ... so, in the first stage of the process we assumed some relations with the Ecuadorian Association of Software Producers (AEOSOF), some universities, UNESCO and the Ecuadorian Corporation of Electronic Commerce (CORPECE) through the participation of these actors, we began to conceive of some projects and programs”²¹⁶.

This working team periodically met in joint sessions, since August 2002, designing and establishing different parameters and general guidelines for the *Quito Digital Program*, which was conceived from the beginning as an integral project including, according to Jijón:

“connectivity initiatives, ICT incorporation, diffusion and training, technological support, citizen participation, and education. These sessions resulted in 5 projects: e-Government , Educanet, Internet for all, Cibernarium, and Preservation of the Digital Memory”²¹⁷.

To this program were incorporated, also, previous projects that the municipality had initiated before, such as *Educanet* and other projects: a web-site, on-line services, number streets system and certifications.

On April 2003, the Municipality of Quito signed the constitution act of the *Quito Digital Program* Managing Committee with the participation of different sectors and organizations: private (AETIS and AESOFT); academic (National Polytechnic School and Armed Forces Polytechnic School); governmental (CONATEL, National Agenda for Connectivity, ANDINATEL, and the Education Ministry); local NGOs (CORPECE); and international NGOs (ORCILAC/UNESCO and UNDP).

The 5 projects in detail:

²¹⁶ Jijón, Francisco. Head of the Projects and Strategic Futurology Unit of the Municipality of Quito. Interview in Quito. May, 2003.

²¹⁷ Ibid

“e-Government : universalisation of ICT-use in the services provided by the municipality for the citizens, and within the internal processes and systems, establishing an integrated system of on-line management.

Educanet: incorporation of ICTs in public and semi-public schools and colleges existing in the city of Quito.

Internet for all: massive provision of a personal computer (including technical support and maintenance) for housings and small businesses, and cheaper costs to the Internet access.

Cibernarium: implementing public centers to train citizens on the use of ICTs.

Preservation of the Digital Memory: to preserve the documental heritage that exists in Quito and which, among other aspects, is giving its Humanity Heritage²¹⁸ condition; and to generate norms, systems and standards regarding the management of all the information that is currently produced and kept in digital supports (based on the world pilot project from UNESCO)²¹⁹.

b) Assumptions and goals

Assumption 1: Technology is a fundamental condition for the institutional, economic and social modernization of the city and the human development of the citizens.

The *Quito Digital program* developed by the Municipality of Quito has:

“the general goal of implementing a sustainable and intensive incorporation process for ICTs within the Metropolitan District, as a fundamental condition for the institutional, economic and social modernization and for the sustainable human development of the city and its citizens”²²⁰.

Assumption 2: ICT applications could serve not only to supply more and better information and services to administrators, representatives and citizens, but they can be expanded to improve other areas of the population of the city of Quito.

²¹⁸ In November of 1978, Quito was declared by UNESCO as the “Cultural Patrimony of Humanity”,

²¹⁹ Institutional Document. Lineamientos Generales del Programa Quito Digital. Municipality of the Metropolitan District of Quito (MDMO). Projects and Strategic Futurology Unit. Quito. April, 2003.

²²⁰ Ibid.

This can be seen in some general goals of *Quito Digital*:

- “To maximize the digital inclusion of all the sectors of the society.
- To use the ICTs to surpass local management, and to guarantee the right of the citizens to information, transparency and the security of citizens acts.
- To develop the processes and proceedings of the municipal management with the support of ICTs to optimize the costs, times of execution and use of all kinds of resources in order to benefit citizens and their institutions.
- To promote and realize projects of digital economy and e-Commerce with the participation of the municipality, enterprises and citizens, to support the economic development of the society, especially the small and medium companies that are the source of work and motor of our economy.
- To establish a strategy based in ICTs to guarantee the security and citizen order”²²¹.

Assumption 3: Mechanisms of cooperation with other sectors of the society can improve citizen participation.

Assumption 4: Establishing agreements for international cooperation and financing will lead to the feasibility of some projects of the program.

c) Limitations and solutions

Limitation: Isolated municipal projects

Some of the *Quito Digital* projects have been initiated before *Quito Digital* appeared as a program, such as *Educanet* which was carried out by the *Municipality Direction of Education and Informatics*, which has been incorporating computers within municipal schools and colleges and also offering some training to teachers. The municipal web-site was also designed before *Quito Digital* appeared.

²²¹ Institutional Document. Acuerdo de Constitución del Comité Gestor del Programa Quito Digital. Municipality of the Metropolitan District of Quito (MDMQ). Projects and Strategic Futurology Unit. Quito. April, 2003.

The local program has merged some of the municipal projects developed before and suggested new ones. It remains, however, an isolated paper program within the municipality and plans, mainly because there is no concrete department working with *Quito Digital*. All that exists are isolated initiatives developed by different people within different areas.

Limitation: Scarce resources

One of the major limitations to carrying out *Quito Digital* is the lack of economic resources within the Quito Municipality. According to Francisco Jijón, Head of the Projects and Strategic Futurology Unit of the Municipality of Quito, it is necessary to work together with other private and public institutions to be able to get more resources:

"Resources are not only economic; we need also technical cooperation, services, sponsors, etc"²²².

Luis Barzallo, municipality authority, argues that the Municipality of Quito has created an interesting program of e-Government but it needs a strong investment of financial and human resources:

"*Quito Digital* is a good beginning within the municipal management, it will be of course a program that will need to build strategies in its implementation to get resources ... it is not only a technological change, but a human and organizational transformation, which needs also to incorporate the citizens as part of this transformation ..."²²³.

Limitation: Lack of modernization of the local management system

ICT-dissemination was also seen as part of municipality management but it took place in the form of computer placement rather than appropriation as discussed in the previous chapter. Jijón argues for the need to transform management in more than a superficial manner:

²²² Jijón, Francisco (2003). Op. cit.

²²³ Barzallo, José Luis. Article: *El Gobierno en Línea en el Ecuador*. Law Journal. Available at: <http://www.dlh.lahora.com.ec/paginas/judicial/PAGINAS/D.Informatico.41.htm>

"... it is not about carrying out the same municipal management adding computers. The technology is an instrument to solve other types of problems. And one of the fundamental problems is the modernization of the local government management system ... it is not only about showing municipal information through the Internet or a web-site, but about changing the management, the organization, and the mentality ... and that is what we will try to do"²²⁴.

Within the Quito Municipality there is an *Institute of Municipal training* (ICAM in Spanish) which has as a main goal to train and update municipality workers in different matters. The Municipality has carried out workshops with this institute as part of general modernization of the municipal management system. It will be necessary, however, to carry out serious management reconstruction in order to be able to reach the somewhat lofty *Quito Digital* goals.

According to Bermúdez, in some technical areas within the municipality, such as the *Metropolitan Direction of Territory and Houses*, technological appropriation has been necessary and taken place in sporadic areas:

"Because we work with all the data base of Quito territory and houses. We work with technicians that are competent, and also we have the cooperation of foreign technicians, who have developed some geographical systems ... As well, we have developed together with the Metropolitan Direction of Informatics some on-line services through our municipal web-site. Citizens can get some certifications through this new system ... there are some improvements in the municipality management but not a specific program to carry them out"²²⁵.

Limitation: Lack of infrastructure and connectivity

There have been within the municipality instances of internal modernization which has included infrastructure and connectivity. As Jijón explains, however, access remains a problem:

²²⁴ Jijón, Francisco (2003). Op.cit.

²²⁵ Bermúdez, Nury. Authority of the Municipality of Quito. Interview in Quito. February, 2005.

"We have created a web-site and we are offering some on-line services. We can't, however, have only on-line services for the citizenship, because the majority of people don't have access to the Internet. Thus, there are also some other priorities such as connectivity and citizen digital training, which they can get through the creation of telecentres or cyber-cafes. Therefore, first, the municipality can't be in charge of all this; and second, we need to think in a more integral program of diffusion and training of these technologies which need the participation of other social actors, national government and telecommunication companies ..."²²⁶.

Limitation: Social and economic gaps

Although *Quito Digital* has been constituted within an inter-institutional management committee which involves other private, academic, public sectors, and is developing some initiatives, according to Jijón this process results in a very complex process which is leaving out important sections of the public:

"Our objective aims at the human and social development, but there are deep social and economic gaps which are difficult to overcome. There is not, thus, only a digital gap, but also a human and social gap, and in this respect we need to look as a municipality at other aspects of competitive and economic development ..."²²⁷.

Limitation: Bad services and corruption

Municipal management has been characterized as offering bad services to the citizenship. *Quito Digital* aims to offer better services through ICTs and more citizen participation. The Quito web-site: www.quito.gov.ec has been one initiative to improve both aims. (I will explain this further below - section 3).

Jijón suggests in relation to the municipality on-line services, that these moves will eventually lead to better and more democratic services:

²²⁶ Jijón, Francisco (2003). Op. cit.

²²⁷ Ibid.

“On-line services apart from being quick have more aggregate values. For example, they will reduce the discretion of the employee. If you ask for an on-line certification, you have the automatic right to get one, and you are not at the mercy of a municipal employee who many times puts your proceeding in the front or back of the queue. Then, citizens are in a kind of peregrination asking in many of the municipal instances where and how are their proceedings ... it generates corrupt acts ... but with on-line services it will be possible to stop this”²²⁸.

Limitation: Lack of coordination

Quito Digital has been designed with a committee which involves other social and economic sectors, which is positive as they plan to work on ICTs matters through collaboration. There is a lack of coordination, however, in order to promote and carry out concrete projects. These include ICT public policies and projects aimed at other sectors such as the telecommunication sector.

One of the projects which is being carried out now, *Cibernarium*, has to deal with lack of coordination which makes the process of consolidation slow. (I will refer to this further below in the *Cibernarium* case - section 4).

d) Conclusions

1. *Technology is a fundamental condition for the institutional, economic and social modernization of the city and the human development of the citizens in a general sense.* It seems that the municipality is aware of the importance of the technology in order to improve municipal departments and the city in general. It has expected that the *Quito Digital* program look at citizens not as isolated but in relation with the municipal departments, with the city and with their own human and social development.

ICT-appropriation by citizens, however, requires developing a series of actions and activities that allow them to incorporate ICTs within their daily routine or even to feel

²²⁸ Ibid.

motivation to use them. This has been one of the considerations of the *Quito Digital* program.

There is a lack of interest, however, that also prevents them to look at broader social and cultural issues that can truly generate, as they have assumed, human development. This requires an on-going “awareness” and dialogue in order to be able to improve the political and democratic system with citizens as the major beneficiaries.

In other words, a double meaning of appropriation can exist. At a practical level, referring to the practical projects and actions that the program is developing and it is going to develop. At a second level, that goes beyond practice, that involves an awareness about the social and cultural role that the governmental institution must play with its citizens, in order to maintain, as socio-cultural theory pointed out: ideological sovereignty, cultural activity, development of national identity, to mention a few. It also implies for citizens the re-adaptation, revaluation and appropriation of ICTs in order to be able to use them to their own benefit.

2. *ICT applications could serve not only to supply more and better information and services to administrators, representatives and citizens, but also they can be expanded to improve other social areas impacting the inhabitants of Quito.* This assumption has close relation with the first assumption. The impact, however, that such appropriation implies will depend on whether the municipal government is able to consider other strategies than simply technological ones looking, for example, at social and cultural differences.

The *Quito Digital* program is promoting five main projects of which some of them have been developed earlier. Although, *Quito Digital* can be a program that brings together all the municipal projects that involve ICT, in reality, it seems that this program is almost an isolated initiative. This situation seriously prevents the coordination of new initiatives, as the case of the *Cibernarium* project will show later in the section 4.

This situation not only makes the development of ICT initiatives more difficult but as well it prevents results in a long term. If we considered that every four years the municipal

authorities and main heads of departments are changed, without any solid department working on ICT, this project will have more difficulties to survive with new municipal authorities as was the case of the *NAC* program. Continuity continues being one the important consideration in order to carry out long term projects. There is a need to consolidate a specific working group in charge of the program outside of political interests.

3. *Mechanisms of cooperation with other sectors of the society can improve citizen participation, as this case showed.* This was seriously considered at the beginning of the formulation of the program. It was also elaborated within a participative dialogue with other social sectors: private, academic, civil society organizations, and public entities. Due to the lack of coordination and general interest, however, this program has not been able to maintain dialogue and alliances to promote ICT projects.

Under a social perspective, the inclusion of ICTs emphasizes the need to consider different social sectors. This not only to make it easier to carry out an ICT project with the participation of different people that may can have more experience in specific areas but also as it allows one to look at broader social scenarios, interests and needs.

4. *Establishing agreements for international cooperation and financing will lead to the feasibility of some of the program initiatives can be a way to develop an e-Government strategy.* ICT-appropriation implies investment and therefore financing resources. One of the main problems in the Ecuadorian government institutions is the lack of economic resources to develop projects. International cooperation, however, can be important in order to carry out this program, which means not only "money" but it can be a cooperative way of work with people that have more experience in ICT matters. I will return to this during the study of the *Cibernarium* project.

6.3. QUITO MUNICIPALITY WEB-SITE: *WWW.QUITO.GOV.EC*

a) Background to the project

The web-site was created in 2000, when the municipality saw the necessity to have a web-site where they can place information related with the municipality and Quito city. The web-site was built with a multidisciplinary working group as well as some students:

“The web-site has been changing during these years. Students have learned more about web-sites and also they have been changing the conceptions of it according to the necessities of the municipality. After approximately one year the web-site started being created by a multidisciplinary group of different municipal dependencies, and the social communication department took the direction of the web-site. Actually, we have added many new links and also a few on-line services”²²⁹.

The local municipality web-site: *www.quito.gov.ec* contains dynamic pages with striking graphics.



This web-site presents general information which includes a presentation of the institution, its working plan, the biography of the current mayor, municipality decrees, the electronic addresses of other municipality instances, cultural activities, tourist aspects of the cities, some useful information for citizens regarding municipal consultations and procedures, and some conjectural institutional news.

The web-site provides links to other municipal instances, foundations, corporations, museums, theaters, virtual libraries, etc. As well, it offers a few on-line services for citizens: registrations, certifications of real states, payments, and the possibility to send e-mails to the web-master and to officials.

²²⁹ Bermúdez, Nury. Authority of the Municipality of Quito. Interview via e-mail. April, 2005.

b) Assumptions and goals

Assumption 1: The creation of a web-site for the Municipality of Quito will keep citizens well-informed and on-line services will improve municipal proceedings.

Assumption 2: The web-site also is a relatively cheap way of advertising the city's potential abroad with tourists and investors.

c) Limitations and solutions

Limitation: On-line services can't replace completely face-to-face services

On-line services are not going to replace the traditional means of "face-to-face" services, but it can offer a new possibility to improve municipality services through decentralized and more transparent procedures. The Quito web-site offers some on-line services which has made it easier that citizens can get certifications, general information and learn about proceedings.

Lack of infrastructure and connectivity, however, makes it difficult to expand on-line services to all citizens.

Limitation: Lack of interactive strategies to promote citizen participation

Web-sites have the potential to offer services in an interactive way to citizens, which could promote citizen participation within municipality decisions. However, although, the Quito web-site makes it possible to send e-mails to some of the municipality instances, according to Bermúdez:

"citizen participation is minimal. It will be necessary to promote other mechanisms that make it possible to promote a real citizen participation using ICTs"²³⁰.

²³⁰ Bermúdez, Nury (2005). Op. cit.

d) Conclusions

1. *The creation of a web-site for the municipality of Quito has been seen by many public, private and civil society organizations as an important way to disseminate information and to offer some on-line services in order to improve institutions and to extend information not only locally but also internationally.* Within the municipality, the web-site offers some on-line services in order to improve proceedings and make it easier for citizens to get certificates and to fill out forms. This is a way to evade bureaucratic proceedings and corruption which has been very common within municipality departments. On-line services are, however, still few.

The *web-site* of Quito municipality, as well, offers daily updated information in order to inform to the citizens who have access to the Internet. A web-site can contribute to fostering empowerment and participation and make local government processes more efficient and transparent by encouraging communication and information – sharing among people and organizations, and within government institutions.

Without any national public policy in charge of ICT matters, however, many of the improvements continue being only accessible by a “city elite” that can afford to have technology, connectivity and basic skills. There is a serious need for the development of a national program that considers the development of national policies. In recent years, this need has been considered mostly by civil society organizations which are pushing governments to take decisions.

2. *The web-site also is a relatively cheap way of advertising the city's potential abroad with tourists and investors.* Technology implementation, however, requires high costs of hardware, software and Internet services which may invalidate this assumption. In order to overcome these limitations, as I mention above, national policies need to be developed looking at telecommunication services and companies, infrastructure investments, and within a dialogue with the private sector in charge of services – e.g. Internet providers, telephony companies - in order to ascertain reasonable implementation and access costs.

6.4. *CIBERNARIUM*: PEDAGOGICAL SURROUNDINGS FOR THE DIFFUSION AND THE DIGITAL TRAINING

a) Background to the project

The @lis: Alliance for the Information Society²³¹ of the European Union jointly with the city council of Barcelona - leader of the program- created the *Cibernarium* program with nine countries as partners. This included five Latin America cities: David (Panama), Maule (Chile), Porto Alegre (Brazil), Sao Paulo (Brazil), and Quito (Ecuador); and four European cities: Barcelona (Spain), Brussels (Belgium), Tampere (Finland) and San Sebastian (Spain).

The @lis initiative, through the leadership of the city council of Barcelona, made an open call between to European and Latin American countries to participate in the *Cibernarium* project. Quito, through the municipality of the city, was one of the selected cities to carry out this project.

On February 2004 the first meeting between the cities partners of the project was held in Barcelona, in which the general regulations of the project were explained and developed through workshops to talk about the needs of the cities in order to overcome the digital challenges.

The project was to create three "pedagogic" spaces for diffusion and digital training to improve the knowledge, access, use and optimization of ICTs. These spaces are: CiberWeb, CiberSpace and CiberTV.

CiberSpace: is a physical-pedagogical space with technology infrastructure and connectivity, where citizens can learn about ICT potentialities in different sections. One of the sections of this space will be covered by video documentaries that tell stories about how people use technologies and how successful it has been to adopt them. All the partners of the project are elaborating

²³¹ @lis, Alliance for the Information Society: "a program of the European Commission aiming to reinforce the partnership between the European Union and Latin America in the field of the Information Society. Its objectives are to establish dialogue and cooperation on policy and regulatory frameworks in key areas and to boost interconnections between research networks and communities in both regions". Available at: http://europa.eu.int/comm/europeaid/projects/alisis/index_en.htm

twenty local and national videos to be shown in this space (The author of this study is the director of 10 videos for Ecuador. These may be viewed in the DVD attached to this thesis).

In the case of Quito, the *Cibernarium* project was incorporated within the Corporation *Technological Park* which is building and equipping a specific space within the *Museum of the Science and Technology*, an old factory of 300 squares meters in the historical city center.

The target public will be all the inhabitants of Quito: workers, students, unemployed people, craftsmen, to mention a few.

CiberTV includes ten TV-series called: "Global-Local", which has been filmed in all the city-partners of the project by the Spanish Company *Lua Multimedia*. This series will be distributed freely between all the local TV-stations that want to show them. The main objective for this is to generate a space of dialogue between different sectors of the society looking at the possibilities that technology offers to citizens in order to promote social development. The contents of this program were supervised by the Spanish sociologist and ICT-expert Manuel Castells.

CiberWeb: it is a web-based platform that offers contents and services to citizens for digital training, and at the same time it will be an on-line platform for the use of the city-partners of the project, through which they can be connected and communicated.

In the case of Quito, the *Cibernarium* project as part of *Quito Digital* program has been incorporated within the *Corporation Technological Park of Quito*. This corporation is a public entity where the Quito Municipality is one of the members. This entity was created in 2003 and it has as one of its objectives:

"the development of mechanisms to promote the technological development in Quito city"²³².

Other goals include: to wake up the interest of the citizens towards ICTs, to facilitate technological access, to generate telematic culture, to break barriers in relation to the knowledge

²³² Statutes of the Corporation Technological Park of Quito. September, 2003.

society, to train people in the use of technological tools for its personal and professional application.

b) Assumptions and goals

Assumption 1: Digital diffusion and training are fundamental in order to assure access and benefits of ICTs for all citizens.

Assumption 2: International cooperation allows the sharing of ICT experiences, digital contents and ensures financial resources.

Assumption 3: Cibernarium will overcome digital barriers within the population and technological is as important as potable water.

"Today, to have access to the technology it is as important as it was before the potable water ... it is necessary to fight against digital barriers and *Cibernarium* aims to be a project that incorporates citizen in the entire city with or without digital knowledge".²³³

c) Limitations and solutions

General Limitation: Lack of infrastructure and contents

Lack of infrastructure, connectivity, contents and digital training continue being some of the main limitations for ICT-appropriation a broad range of by citizens. The *Cibernarium* project aims to make these lacks some of its challenges, promoting a creative and useful way of ICT-appropriation.

Limitation: Scarce economic, technical and human resources

Most of the public institutions are not able to develop projects, as the *Cibernarium* project, due to the scarcity of economic and human resources.

²³³ Newspaper "La Hora". Article: [Quito en el Ciberespacio](#). February, 2005.

According to Bermúdez this may be solved in part through international cooperation:

“one of the mechanisms to make some of the municipal projects reliable has been international cooperation which is not only economic, but principally technical support in different areas ...”²³⁴.

The network of cooperation between north-south and south-south may be one of the strategies to make the implementation of ICTs possible. The *Cibernarium* project expects that each city create a physical space and develop digital contents for diffusion and digital training supported by the countries that know more on these subjects. For example: Tampere will develop some web-based e-Learning platforms for digital training. Brussels is going to do some interactive games, simulators, etc.

All these technological products created by each one of the partners will be distributed for free between the other partners. This form of collaboration opens the possibility to share ICT experiences between countries with more or less digital development.

General limitation for projects: Political and financing commitment for projects

The *Cibernarium* project has the financing of the *Office of Exterior Cooperation of the European Union* and the *Municipality of Quito*. For the execution of this project the political commitment of the Municipality was necessary and was assumed by the present mayor of Quito (Paco Moncayo) and the General *Direction of Development Management* (Arq. Diego Carrión).

The co-financing and the political commitment has guaranteed the implementation of the project until now. Future funding to realize all the facets of the program is unclear.

Limitation: Lack of knowledge about ICT matters

Within the municipality, the *Cibernarium* project has led to a recognition, according to Bermúdez, that there is a lack of knowledge about ICT matters regarding how to tie it to broader objectives

²³⁴ Bermúdez, Nury. Authority of the Municipality of Quito. Interview in Quito. February, 2005.

and projects. Although sharing experiences with other countries of the project can show the municipality how to carry out some strategies, they need competent people and sufficient ICT knowledge in order to take full advantage of this program.

Barcelona, the city leader of the project, has created the *Cibernarium* in its own city many years ago. This ongoing experience let them further a strategy of digital diffusion. The Barcelona initiative has been shared with other countries, which will in turn have to find their own local mechanisms to carry out the *Cibernarium* project in their own contexts.

Each city partner of the project will create its own strategy to consolidate the *Cibernarium* space. In the case of Maule in Chile, for example, they have incorporated this project within a previous project of Telecentres.

In Quito, there is no broader initiative in which this project can fit, this implies the need to begin from the beginning. *Cibernarium* can be the start of a broader ICT initiative initiated by the local government but this will require funding, political will and continuity.

Limitation: The lack of a local strategy

Quito's experience in relation to diffusion and digital training for all citizens hasn't been developed by a specific governmental institution. Therefore, Quito is taking part in the *Cibernarium* project without any previous knowledge. This situation has generated the need to design a local strategy that allows the people of Quito ICT training through the *Cibernarium* space and contents.

This local strategy, however, needs to be built in a broader perspective of how *Cibernarium* can function as a long term project. According to Bermúdez:

“Carrying out a local strategy for this project has been very difficult, mainly because nobody was in charge of it. Just recently we have decided who is going to be in charge of the project as director and executor. Decisions take time within this public institution, and although, the city leader of the project Barcelona has developed specific technological

and communicative objectives for the *Cibernarium* project to be carried out, I think we need to implement our own local management ..."²³⁵.

In other words foreign models may not simply be adopted, but must be appropriated and changed according to local needs and local limitations.

Limitation: Lack of collaboration between social sectors

Only a few Ecuadorian sectors work together in the development of ICT projects and approaches that can influence and lead to real public policies to government for ICT-appropriation. The *Cibernarium* project requires the incorporation of other local social actors for the elaboration of a concrete local strategy. This collaboration could be extended to more local public institutions, private companies and civil society organizations.

One of the reasons to incorporate the *Cibernarium* project in the *Corporation Technology Park of Quito* was because it facilitated the administrative and financing management of the project. It assures also other local partners within the project.

Bermúdez suggests that they want to involve some universities and private sectors to further develop infrastructure and training:

"For example, a strategic partner will be the *Foundation of the Pichincha Bank* which is going to donate some computers. Also, students of the national and military Polytechnics are going to be incorporated in this project"²³⁶

d) Conclusions

1. *Digital diffusion and training are fundamental in order to assure access and benefits of ICTs for all citizens.* The municipality must determine who is going to be benefit from such ICT-appropriation. This requires thinking about broader objectives that ensure the incorporation of marginalized sectors of the city of Quito. ICTs can have "aggregate

²³⁵ Bermúdez, Nury. Authority of the Municipality of Quito. Interview by e-mail. March, 2005.

²³⁶ Ibid.

values" with those citizens that can find ways to improve their human and social development. (This is returned to in the chapters that follow on training).

2. *International cooperation allows the sharing of ICT experiences, digital contents and ensures financial resources.* Although international cooperation has been one of the mechanisms that has allowed to Ecuador and many other Latin American countries to carry out many projects in different areas and through different social actors – e.g. many ICT initiatives developed in Ecuador by civil society organization have been possible to carry out thanks to the international cooperation - local adaptation is generally needed.

Government and other civil society organizations, in order to have economic resources to develop the country and projects, often promote international cooperation. This has, however, in many cases led to misunderstandings, few real long term benefit for grassroots or marginalized people and often to corruption²³⁷. Although, this is not the case of the *Cibernarium* project, it is important to consider the likelihood of this in order to avoid them within the project.

While the *Cibernarium* case has been able to ascertain important international cooperation and financial resources and the sharing of ICT experiences and digital contents, it is necessary to carry out a local strategy that defines terms and conditions on which this cooperation can extended in a positive manner.

As Latin America socio-cultural theory pointed out there was an important shift of thinking about theories of dependency and cultural imperialism which were offering a narrow approach, with a broader understanding that implies to look at and examine social practices. Within the social ICT approach is a double task. First, how national cultures are being affected by the advent of ICTs and second, how social groups appropriate technologies, reinventing and perceiving them within local territories. This double concern is important when considering the way in which the *Cibernarium* is conceived in relation to citizens and a re-appropriation of a "foreign" strategy within the local territory. Policy and project implementation must be reformulated and created in line with local

²³⁷ See: Orduna, Jorge. ONG: Las Mentiras de la Ayuda. Sur Editores. Quito-Ecuador. 2005.

contexts to ensure that they empower citizens rather than create new needs and dependencies.

3. *Cibernarium will overcome digital barriers within the population.* Although digital training is aimed at overcoming digital barriers such as infrastructure, training and connectivity to mention a few, there are some broader issues to consider as well. If the *Cibernarium* is a way to promote ICTs within population, it is important to ask who will be the audience of this training and what will be the mechanisms that make people to feel motivated about ICTs and appropriate them for their own needs.

Coming back to some of the limitations of the entire *Quito Digital* program, some limitations were related with the need to anchor this project in a specific working area or department that can work concretely in the development of projects as well as create and design local strategies.

A result of this lack of anchoring, is that the *Cibernarium* project is having a problem in order to develop a local strategy that can allow it to take real advantage of this project. While the project has been able to get economic resources and the technical expertise of international cooperation, without a clear working group it will be difficult to develop sustainable local strategies.

Bernardo Sorj, a Brazilian researcher, argues that governments are the main actors to guide ICT strategies and processes of ICT incorporation in broader national agendas, in the sense that they can designate economic resources and take political decisions. This may be true if governments have the capacity to carry out a strategy. This is not a reality within Ecuadorian governments. In my opinion, there are major limitations and misunderstandings within Ecuadorian governments in the way that they are approaching ICTs. Perhaps, civil society ICT experiences can help to clarify some of the governmental ideas about them and I will turn to these in Chapter 9.

First, however, I wish to draw out some conclusions across the case studies on government (national and local) initiatives.

6.5. CONCLUSIONS

6.5.1. Practical

- e-Government, defined broadly, is the appropriation and use of ICTs to promote more efficient and effective government in all their internal political processes and legal measures. Considering this in relation to the *NAC* case study, technology adoption was in general not enough to promote change within most governmental institutions. There was a need to look at broader aspects that refer to, as the *SRI Tax Office* showed, a complete internal public management reform that took on also broader aspects of management and transparency.

Some considerations that need attention include:

- The interest, political enthusiasm and guidelines to promote the project;
 - The capacity of politicians and managers to mobilize resources within and outside their organization;
 - The capacity of design and strategic planning of the projects, remembering the institutional conditions and specificities proper to each context and concrete problematic;
 - Proper organization and the involvement of critical actors within each e-Government project.
- The strategies to carry out an e-Government program can be diverse. They should, however, aim at a positive social effect of ICTs in relation to the government and its actors. An e-Government process includes not only the participation of the State and the public institutions, but also other sectors: private, and principally civil society.

With regards the *NAC* e-Government program, at the beginning the people who developed this program were aware of the need to integrate different sectors from the society in order to carry out these e-Government proposals. This didn't continue being an essential priority within its agenda, however, as there was a lack of interest, leadership and knowledge about ICTs that prevented them carrying out strategies and developing policy.

- e-Government is a process of change which can open new channels for democratic participation, where citizens can be able to establish a dialogue with governments. This can be essential in order to maintain a more democratic government, and also it can give back to the government a better image in the eyes of its citizens (who don't believe anymore in the "good intentions" of governments).

The development of mechanisms to do this can be ICT-appropriation, as seen within the *SRI Tax Office*, changing the institution internally with technology and human resources and developing a clear and quicker public management through the creation of an information and communication network, a web-site that offers on-line services and improving the services for citizens looking closely at their conditions and needs. All these changes have meant that the public institution recovered its image and therefore the confidence of its users, the citizens.

- e-Government facilitates access to information and services through ICTs which presupposes as well the possibility to connect citizens in public reforms and democratic decisions with governments. The *Cibernarium* project of the local government of Quito could be one of the best initiatives in order to offer citizens the possibility to learn about ICTs and therefore to be able to participate in a more open dialogue with government. This project, however, still requires a carefully developed and a local strategy that can look at broader objectives in order to re-appropriate foreign strategies within the local context.
- e-Government requires a series of policies related with ICTs developed by the government. Some of the limitations discussed in the case studies were related with the lack of national policies that can lead to ICT-appropriation a favorable context. ICT national policies – e.g. telecommunication policies in relation to the costs of services – could give benefit principally to marginalized sectors that at present are almost totally excluded from any national ICT initiative.

An e-Government proposal cannot benefit only the "city elite" that can afford to have access, technology, connectivity and basic skills. There is a serious need for the development of

national policies. In recent years, this need has been considered mostly by civil society organizations which are pushing governments to take decisions. It continues, however, being impossible when political and economic crises are more important for them to consider.

- As the e-Government national and many local programs (with the exception of the *Cibernarium*) demonstrate, governments may not be the most able to carry out a concrete ICT national program. Based on this assumption it could be interesting to establish a dialogue with other social sectors from the civil society which have demonstrated more experience with ICT-appropriation. As well, there are many positive e-Government initiatives in the Latin American region that can be important to look at within the national context.

6.5.2. Theoretical

- **Beyond ICTs and techno-economic determinist perspectives.**

Many Latin American ICT studies, many of them based on e-Readiness models, followed principally techno-economic perspectives. However, new conceptions, coming from the ICT practices and the socioeconomic and political realities of Latin American countries, point out the need to look at broader social issues. Under these new concerns, an ICT social approach has been developed in Latin America which suggests, as well, looking at the external conditions and influencing factors in relation to the barriers of ICT-appropriation.

In Latin America, "digital barriers" are sub-products of other types of economic, social and political barriers and problems. These problems go beyond ICTs, - e.g. poverty, social and economic inequality, undernourishment, - and affect many of the Ecuadorian sectors not only in the possibility of being connected and have access to technologies, but also in the ease of using and gaining benefit from them.

This situation means that a characterization of ICT-appropriation and "information society" under a simple techno-economic perspective insufficient in the Ecuadorian context (and in many other contexts as well). ICTs, in a variety of ways, are being adopted in Ecuador. This means we must add more issues and nuances, in order to develop an understanding of ICT-use and

appropriation. We need a broader perspective which looks also at how people utilise ICTs as a means for real social change.

Considering particularly the e-Government national and local programs and the ways through which they have been developed, they have, I argue, assumed an incorrect idea about ICTs when they consider primarily technological changes. It prevents, from the beginning, the possibility to expand the conceptual perspective and in a *practical* sense to obtain favorable results.

The *NAC* program in relation to governmental institutions, as one example, suggests that concepts of the “modernization” of the State is seen simply as applying ICTs to government processes and developing its technological infrastructure. This goal undoubtedly can be correct when arguing for technological change, but is not valid enough if it is going to be part of an e-Government proposal which aims to look thoroughly at all the public management of governmental institutions. Thus, many of the concerns of this program need to be analyzed carefully in order to assure concrete actions that in a long term process can lead to positive results within the Ecuadorian society.

The *Cibernarium* project, which main assumption has been to promote the diffusion of ICTs and digital training, needs also to develop a broader strategy. This is not happening due to the lack of coordination. Designing a local strategy of ICT training and looking at social and cultural factors, can make the ways in which ICT can be approach and later on appropriated and use by citizens easier to achieve.

- **The role that ICTs can play in order to generate changes means looking at people and their social practices and needs.**

Latin American socio-cultural theory, concerned about cultural practices, pointed out the need to examine people within their contexts. If we transfer this to e-Government and the possibility to generate changes through ICTs, it can be seen in two ways: one, changes within governmental institutions looking at particularly at the public management; and second, the role that the institution plays in relation to citizens and their needs and context.

The *SRI Tax Office* case can exemplify this both ways. First, it was necessary for a complete reform within the public management of this institution, which meant not only a new technological implementation, but a complete change in the internal organization.

Second, they developed “systems of services” for citizens through face-to-face information desks in *SRI* offices and through the creation of a web-site that offers not only daily and updated information about tributary matters, but also some on-line services for tax declarations and through the development of other communication strategies to inform to citizens about tributary activities. According to Saavedra, director of the institution, through all these improvements they wanted to offer high-quality services to citizens and make tributary activities easier:

“We are thinking of them ... Some of them are not able to declare by Internet, then, they can come to the offices ...”²³⁸.

In terms of analysis, it has been necessary to consider a variety of social groups in relation to the technological changes proposed. Looking at Ecuadorian citizens as one category is too broad. Sharp divisions exist between rural and urban sectors and within rural and urban sectors. ICT-appropriation will take place differentially depending on the needs and contexts of these differing groups. This must then become the starting point for analysis rather than an interesting sub-variable.

- **Information society and the role of the State.**

ICTs, principally the Internet, is a new media through which many “foreign” features are being reconstructed within national processes of intercultural segmentation and hybridization. Young people predominately are redefining their cultural and social needs through this new technology. As Latin American early social theory pointed out there is need to look at how national cultures are being affected and could be affected by these new means. It suggests the need to look at the demands and uses of social groups which re-evaluate and reconstruct technologies and it can be the role that the local government must be take part in.

²³⁸ Saavedra, Vicente. General Director of the SRI. *Annual Inform of Activities 2004*. SRI Institution. Quito, 2004. Available at: www.sri.gov.ec

As Ecuador confronts a social and cultural crisis, and wishes to have not only a subordinate position within ICT-appropriation in relation to other countries, the State and the governmental institutions need to be “aware” about these other concerns in order to preserve social and cultural harmony and identity and further appropriation and innovation.

González Manet²³⁹ argues that one of the challenges that Latin America governments confront in incorporating ICTs, is not only the transfer of technologies or industrial commercial strategies, but the development of coherent public national policies that can guide ICTs through national social agendas.

Sorj²⁴⁰ adds to this that the incorporation of Latin American countries to the so called “information society” depends on the capacity of governments to develop national strategies and agendas which consider ICTs beyond ICTs and digital divides. This position suggests that governments are the main actors to guide ICT processes and strategies in broader national scenarios. However, if I transfer this concern to the Ecuadorian reality, it seems that the national and local governments have not been able to develop ICT plans nor ICT national policies.

Although there are some isolated public practical initiatives that can give governments some ideas in this matter, it is necessary that the government truly develop a better understanding of ICT-appropriation. This may mean the creation of a specific working group that is “non-political” but includes people with experience and competencies that can enable them to find mechanisms and strategies in order to develop national policies and moreover national social agenda that includes ICTs.

Keeping this in mind, in Chapter 9, I will refer to the role that civil society organizations can play within the Ecuadorian context showing perhaps proving more understanding about ICT-appropriation. In other words we need to look beyond the State and private companies or “the market” to fully understand the processes that may lead to the development of an “information society”.

²³⁹ González-Manet, Enrique. Paper: Nuevas Formas de Comunicación y Cultura: ¿Cómo Enfrentar las Nuevas Tecnologías?. Telos number 38. 1994. http://www.quadernsdigitals.net/index.php?accionMenu=hemeroteca.VisualizaArticuloU.visualiza&articulo_id=6267.

²⁴⁰ Sorj, Bernardo, Brazilian researcher. Un-published conference paper. Incommunicado Conference. Amsterdam. June, 2005.

In terms of theory, this means that policy must be considered not in isolation or as part of economic reform but as part of a broader interaction with social actors.

- **ICTs rarely proceed in the interest of democratic ideals.**

Van Dijk²⁴¹ argues that through the opportunities of participation in political and governmental processes, barriers of place and time are removed, and new channels for the exchange of political information, discussion and transparency.

In Landow's opinion, however, this view is utopian and does not consider the majority of contexts:

“The development and dissemination of new technologies rarely proceed in the interest of democratic ideals. Egalitarian principles have always found themselves secondary to the need for the state expansion or corporate profits. Technology may always empower someone, but it can only empower those who possess it and who have access to it”²⁴².

By starting with a less techno-utopian analytical position one can highlight how ICTs might actually be leading to less egalitarian ends.

ICT-adoption might improve democracy but within the Ecuadorian reality, this has to be tempered with political realities. The reality, in this case, has been the ousting of successive governments for incompetency and corruption. The expectation that ICTs added to this situation might ipso-facto lead to greater democracy is a falsehood. Ecuadorian governments, not only face a great need for alternatives to the traditional modes of public management but also democratic stability through which civil society can trust and participate in political matters. Policy must also be created with a broader representation to ensure that policy leads to egalitarian results.

²⁴¹ Van Dijk, Jan. *The Network Society*. Sage Publications. London, UK. 1999.

²⁴² Landow, George. Trend, David. *Cultural Democracy: Politics, Media, New Technology*. Sate University of New York Press. New York. 1997. p. 108.

Government information, such as the presented on the Ecuadorian government web-site, is not beneficial to any great extent when large groups can't access it, and others have little faith in the government providing the information.

ICTs in Ecuador are not contributing to any democratic ideal within an e-Government perspective. Paradoxically, many sections of Ecuadorian civil society are more aware about the ICT potentialities as a "democratic" way to access information and be able to participate in broader scenarios (I discuss this in Chapter 9 regarding about civil society organizations and networking).

- **Contexts are specific and concerns need to be reassigned to the specificities of local contexts.**

In Chapter 2, I discussed some general trends that have been used to characterize the "information society" and ICT analysis. These perspectives followed many of the arguments that developed countries used in order to analyze ICT-appropriation. Some of these perspectives, as well, have been used within Latin American studies. Many of those studies have emphasized techno-economic perspectives. As I argue above, these perspectives are insufficient.

These conceptual and practical issues I will now carry forward to a set of case studies on e-Learning. These begin, particularly in Chapter 8, the move to informal non-government activities.

CHAPTER SEVEN

e-LEARNING – PART ONE

FORMAL EDUCATION

7.1. INTRODUCTION

In the previous chapters on e-Government, I developed some central arguments of this thesis. These included the need to consider ICT-appropriation as more than technological change. ICT-appropriation I argued required the participation of various social sectors and is not exclusively a matter of governments. Government policy is, however, a necessary step to ensure equitable access.

In the next two chapters (7 and 8), I explore ICT use within *formal and non-formal education*. e-Learning, understood not only as the adoption of electronic media in a learning scenario, raises issues about socio-cultural factors, citizen formation and participation, and linguistic diversity. In these chapters, I will follow the same structure for the analysis of the case studies as that of the previous two chapters:

a) Background to the project: What are the characteristics of the project? How has it been created? What are the social actors involved in the creation of the project? The background includes the contextual and ICT features through which the case studies have been created as well as issues of sustainability – the how and why it has been possible to carry out the project.

b) Assumptions: What are the underlying assumptions about ICTs that have affected the ways in which they have been implemented? These assumptions are varied - from perceptions of technology as drivers of change themselves to concepts of a “naturally developing” equitable future with equal global access. At times they are anchored in an understanding of technology and change as a process with social actors and a variety of stakeholders.

c) Limitations: What are the factors inhibiting successful ICT-appropriation or implementation? These limitations range from issues of access, training, political decision, social gaps and financing, to misconceptions of the underlying principles of e-Learning.

Solutions: What solutions have been sought to work around inherent limitations? Which social actors have been involved in these solutions? In some of the case studies solutions have been found. These are highlighted in order to determine some of the practical possibilities that ICTs offer to these three sectors of analysis.

d) Conclusions: The conclusions cross-over between the case-studies and raise practical and theoretical issues tying them back to the concerns raised in Chapter 3.

E-learning is discussed in two chapters (Chapter 7 and 8). This chapter considers *formal education* and has been divided into four sections:

The first section is the introduction, approach and outline of this chapter. The second section explores the history and context of ICT-appropriation within education in Ecuador, describing some of the available data in relation to literacy levels, infrastructure, teacher salaries, and economic resources. This section then provides a background for the next e-Learning case studies, and points out again the need to look at contextual features that can be determinants in e-Learning cases.

The third section discusses the *Edufuturo* case which was the first educative program to promote ICT-appropriation in the rural and urban public primary schools in the province of Pichincha (Quito and its surroundings), which has been developed by the local government of the province. This case raises, however, issues that suggest looking at educative reforms within the entire Ecuadorian educative system as well as general internal relations within schools amongst teachers, directors and parents.

The fourth section explores the *Virtual College* which is the first web-based learning project at secondary level in Ecuador. This project focuses on the need to incorporate disadvantaged people who, for different economic and social reasons, haven't been able to study or to complete

their secondary education. Of particular interest is the *Virtual College's* use of "free software" and the alliances it has created between organizations to develop new tools.

7.2. HISTORY AND CONTEXT OF ICT-APPROPRIATION WITHIN EDUCATION

7.2.1. History

Fabián Jaramillo²⁴³ has described early implementation of ICTs in some Ecuadorian educational institutions:

"In Ecuador the introduction of computer technology in the educative area happened in the last years of the sixties, through universities and polytechnic schools. Since that decade some projects started to be developed to provide computer equipment and to develop some human resources in academic institutions"²⁴⁴.

After this first step, according to Jaramillo, a second period (1980s) was characterized by the expansion of computer centers, which were gradually converted into centers of digital training for computer professionals, such as programmers, technicians and analysts of computer systems.

During the 1990s, Ecuadorian universities multiplied and diversified their professional training in the area of computing. Additionally, some educational institutions from kindergarten, primary and secondary levels, to higher education institutes, have been equipped with basic computer infrastructure:

"The nineties represented a period of slow, but constant, awareness in the Ecuadorian society regarding the incorporation of ICTs, especially the computer and its main applications, in the diverse activities of the educative system"²⁴⁵.

²⁴³ Jaramillo, Fabián. Ecuadorian Teacher. Post-degree in Informatics applied to the Education Science, University of Brussels-Belgium.

²⁴⁴ Report on the Human Development in Ecuador, 2001. The Communication and Information Technologi@s for the Human Development. United Nations Development Programme, 2001. p:77.

²⁴⁵ Jaramillo, Fabián. How Computers are Being Used in Secondary Schools? Research report realized during the 22nd Advanced Course on National Security for the Development, National Higher Education Institute. Collection: Computing applied to education, volume 1. Quito-Ecuador. Editorial Abya-Yala. 1995.

In recent years, Ecuador has developed several initiatives in formal and non-formal education, from the pre-scholar level to the university level and within the public and private sector. I will discuss some of these later in this chapter. It is necessary, however, to first provide a brief contextual background.

7.2.2. Context

In Ecuador, as in many other poor countries, there are limitations to ICT educative initiatives that relate to other factors such as the national socio-economic situation, geographical features such as place of residence, illiteracy, gender, age and ethnicity.

According to a study carried out by the National Center of Social and Educative Research (CENAISE in Spanish), these limitations often affect the general situation for educational institutions in Ecuador. CENAISE points particularly to difficulties with:

“A lack of educative public policies, a lack of programs and projects related with educative improvements, low assignation of state resources, and a lack of interest to create and carry out an educative reform”²⁴⁶.

7.2.2.1. Literacy levels

The Working Paper for the *National Agenda for Connectivity* suggests that illiteracy remains a major problem:

“The illiteracy level in the urban area is 6.1%, whereas it amounts to 20.8% in the rural area. The rural indigenous population is the most affected by illiteracy: 43% don’t know how to read or write. Indigenous women being more affected as 53% of them are illiterate”²⁴⁷.

²⁴⁶ El Comercio newspaper. Article: ¿Cuál es la situación de la educación ecuatoriana en el contexto internacional? Quito – Ecuador. April, 2005.

²⁴⁷ National Agenda for Connectivity. Working document. May 2002. Quito-Ecuador. p:15.

7.2.2.2. Lacks in infrastructure

According to the journalist Thalia Flores who studied the rural province of Guayas:

“70% of the primary schools in the Province of Guayas have terrible infrastructure conditions”²⁴⁸.

The El Comercio newspaper also took up the particular concerns of rural schools:

“2 of 10 schools don't have electricity and potable water. 3 of 10 schools don't have a sewage system. 4 of 10 schools don't have telephone access ...”²⁴⁹

7.2.2.3. Poor salaries

Teachers are also poorly paid. Monthly salaries range quite a bit but in all cases are low:

“A basic salary of a teacher in the fifth category is USD 228; and after 40 years of being working in the 16th category they will receive USD 674”²⁵⁰.

7.2.2.4. Lack of economic resources

One of the main problems in all the Ecuadorian public educative system is the lack of economic resources to maintain general schools. This compounds a number of general problems including that of a lack of places both at the primary but particularly at the secondary level and prohibitive costs for parents to send their children to school:

“100.000 children can't enter the first year of basic education; 9 of 10 children in the rural sector don't go to the secondary level. The State gives only 20 million dollars for 1900 colleges, and 19000 schools don't have any budget in order to work appropriately ... 70%

²⁴⁸ Flores y Flores, Thalia. El Comercio newspaper. Article: [¡Sepulcros Blanqueados!](#) Quito – Ecuador. April, 2005.

²⁴⁹ El Comercio newspaper. Article: [La Ley de Educación Entra a Discusión](#). Quito – Ecuador. August, 2004.

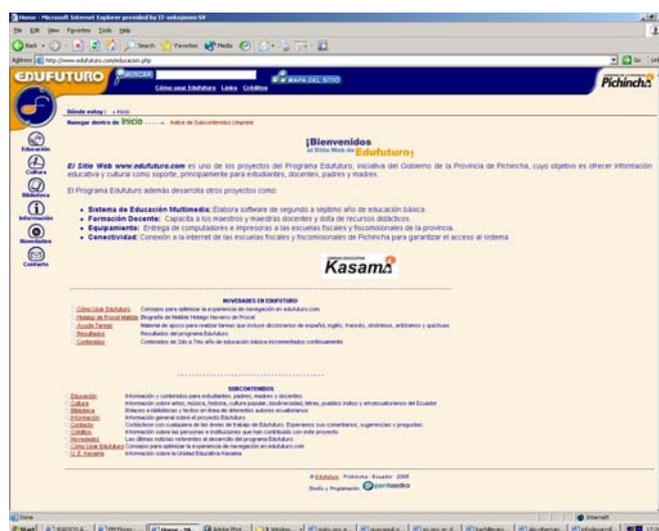
²⁵⁰ El Comercio newspaper. Article: [¿Cuál es la Situación de la Educación Ecuatoriana en el Contexto Internacional?](#) Quito – Ecuador. April, 2005.

of rural children suffer undernourishment, and 65% of population don't have access to primary health attention"²⁵¹.

Some of the resources that the schools received come from the Ministry of Education. These basically cover teachers' salaries. Despite the fact that public education, according to the Ecuadorian law, is free, the only school income that the school might get beyond teacher salaries is the fee that parents have to pay at the beginning of the year (a quantity that the Ministry of Education decides every year). During the academic year, parents have to cover other expenses as well: school uniforms, books, specialized teachers (English, music, computer, to mention a few), as well as other extra expenses related with the institutional infrastructure. This situation has meant that parents with low incomes can't afford to cover all the extra expenses that the school demands.

With this brief introduction to the history and context of education in Ecuador, I turn to the first case study: *Edufuturo*.

7.3. EDUFUTURO. ICT-IMPLEMENTATION IN THE PRIMARY SCHOOL IN THE PROVINCE OF PICHINCHA²⁵²



a) Background to the project

The *Edufuturo* program began in 2001 and it is the first program of ICT-implementation in the rural and urban public primary schools in the province of Pichincha (Quito and its surroundings). This program has been developed by the local government of the province, called the *Provincial*

Council of Pichincha.

²⁵¹ El Comercio newspaper. Article: *El Presupuesto Decae Mientras la Pobreza Sube*. Quito – Ecuador. March, 2005.

²⁵² If you want to know more about the Project: www.edufuturo.com. Contact person: Maria Edith Sánchez, general coordinator / Lucía Moscoso, web-site coordinator.

Edufuturo has been developed by a working group which has planned and designed a variety of projects. These projects include:

1. Technological implementation. The program has given a maximum of 6 computers to some public school of the Pichincha province.
2. Workshops for teaching and training in the use and application of ICTs for school teachers and directors.
3. The development of educative and cultural on-line content through the design of a web-site: www.edufuturo.com.
4. The development of some educative software multimedia (CD-Rom) for all the grades of the school. This includes interactive games that follow the Ecuadorian educative curriculum.
5. Connections to the Internet for all the schools involved in the program.

According to the program's statistics, 92% of the public schools of the province are within the *Edufuturo* program. The remaining 8%, most of them rural schools, are not part of the program because they don't have electricity or simply because the schools' directors didn't want to participate in the program. This program is not obligatory for any of the schools.

The *Edufuturo* program is financed by the Provincial Council of Pichincha, which has designated a budget for this program. According to Sánchez²⁵³, the program has been financed for four years in this first stage and it will be financed for four years more. All the salary costs of the working group are covered by the Council. Computers are covered but not all connections costs. Parents are expected to cover some costs but often can't.

²⁵³ Sánchez, María Edith. Interview in Quito. November, 2004.

Brief context of the Pichincha province

The Pichincha province is situated in the Ecuadorian Sierra. It has 9 cantons: Quito, Cayambe, Mejía, Pedro Moncayo, Rumiñahui, Santo Domingo de los Colorados, San Miguel de los Bancos, Pedro Vicente Maldonado y Puerto Quito. It has approximately 2' 400.000 inhabitants²⁵⁴.

According to the National System of Statistics and Census (SINEC in Spanish) of the Minister of Education²⁵⁵:

“There are 1185 schools in the Pichincha province: 377 in the urban area and 808 in the rural area. There are 7756 teachers: 4682 in the urban area and 3074 in the rural area. There are 217507 primary students: 134226 in the urban sector and 83281 in the rural sector”²⁵⁶.

b) Assumptions and goals

As with the cases for e-Government it has been important to look for some of the assumptions regarding technology that may have affected the projects.

Assumption 1: The addition of technology is (not) sufficient on its own teaching and learning processes.

María Edith Sánchez, coordinator of the *Edufuturo* program, argues that there is a misunderstanding about technology. Many schools and colleges have, also within the *Edufuturo* program, created computer labs to offer a better computer education. According to her, many schools computer labs are used by students one or two hours per week to learn how to use the computer. Learning to use technology alone, however, is not enough, according to Sánchez. The dissemination of technology has led to new questions about how it can be used to reinforce other areas of teaching and learning²⁵⁷.

²⁵⁴ More information: <http://www.pichincha.gov.ec/>

²⁵⁵ Available at: <http://www.edufuturo.com/educacion.php?c=2596>

²⁵⁶ Ibid.

²⁵⁷ Sánchez, María Edith. Interview in Quito. November, 2004.

In other words, one of the concerns of the *Edufuturo* program has been the need to think through other possibilities of how to use technology. One of the goals of the program then has been to create a series of extra projects related with the technological training for teachers and students, e.g. the creation of digital content and to try to get teachers to reconsider technology as subordinate to other teaching goals.

Assumption 2: Technology changes learning spaces and reinforces learned knowledge.

Sánchez suggests, however, that the computer may in some cases replace or supplement the teacher as source of information:

“The computer is a tool that you can use to search information, you don’t need the teacher’s voice to get all the information, and thus it is changing not only the learning space but the relation that the teachers has with the students”²⁵⁸.

One of the goals related with this assumption is the development of a series of workshops for teachers in order to learn computer software and teaching methods using technology – including information searches.

Assumption 3: The quality of the public primary education improves with technology.

According to Sánchez technology-adoption is expected to improve education:

“There was a political decision by a social-democrat to create this program, because the local mayor decided to invest in technology for education Our idea is to be able to improve the quality of the public primary education with technology”²⁵⁹.

Assumption 4: Fewer differences between private and public schools in the use of technology will mean that children can have the same opportunities in the future.

²⁵⁸ Sánchez, María Edith. Interview in Quito. November, 2004.

²⁵⁹ Ibid.

Sánchez argues that since the '90s, private schools have made great investments to equip their institutions with computer lab and classes while public schools have lagged behind:

“Private schools had the good intention that students should learn to handle computers and software ... however, public schools in relation to these private institutions were really in a disadvantaged position ... tell me if children that don't know how to use computers and software are going to have in the future the same opportunities that the ones that know ... what it is going to happen with children that don't have the same opportunities? They are always going to be a in a disadvantaged position ... *Edufuturo* wants to change this ...”²⁶⁰.

One of the goals of the program related with this assumption was to implement technology in the public schools of the Pichincha province.

“We want all the schools of the province to have access to computers and Internet. But mostly, we want that children, girls and boys, have the opportunity to use all the technological tools in order to develop other skills”²⁶¹.

Another goal was to provide telecommunication infrastructure to get Internet connectivity in all the schools.

c) Limitations and solutions

Economic and political context

General limitation: Continuity

The *Edufuturo* program has been a new learning experience for the Ecuadorian local government in relation to ICT-appropriation and its development issues. It was launched as part of a political campaign. Despite this, the local government has decided to continue sponsoring this program for four years more. In Ecuadorian terms this is then a long-term project.

²⁶⁰ Institutional document. Provincial Council of Pichincha. Quito.

²⁶¹ Sánchez, María Edith. Interview in Quito. November, 2004.

According to Sánchez it is also a project that needs such continuity:

“It can not be abandoned now, because we are creating, at least, a sense of how important the digital inclusion within education can be”²⁶².

Continuity also extends to project leadership including experience with e-Learning programs before the start of *Edufuturo*. The leader of the program, María Edith Sánchez, is a teacher with a post degree in ICTs and Public Policies. Her experience has allowed her to have a broader view of how to carry out some strategies to incorporate ICT within education. She has had the opportunity to explore other educative ICTs programs in Latin America, such as the “Huascarán” program in Peru²⁶³, which has been a useful contrast to develop this program.

Sánchez has had the leadership of the program during four years, and during this period of time, she has been able to achieve some results, negotiating not only with governmental institutions, but also with school directors, teachers and the community.

There has also been political continuity. The local Mayor of the province (Ramiro González) who supported this program has won again the political elections for four years more (2005-2009).

Limitation: Lack of coordination between institutions

There have been a number of initiatives to improve the educative system in Ecuador. All of them, however, have been developed separately for different public and private institutions without considering whether other institutions are trying to realize the same changes that they are also trying to carry out.

In the case of one rural school, for example, there are two different projects, one of the Municipality of Quito called *Educanet*, and the other the *Edufuturo* program. Both programs want

²⁶² Ibid.

²⁶³ The Huascarán program is a project of the Ministry of Education of Peru that consists in the incorporation of ICTs within the educative system. More information: www.huascarán.edu.ec

to introduce ICTs within the classes. While both of these projects have been incorporated into this school, there is no coordination between them.

According to the school director this creates some difficulty:

“For us it has been difficult to carry out both programs separately, because *Educanet* wants us to incorporate the parents to the computer training, but *Edufuturo* doesn't have anything about this ...”²⁶⁴.

Limitation: Lack of infrastructure and connectivity

Many of the schools can't maintain their general basic infrastructure (houses, class, gardens, etc) primarily for economic reasons. Rural schools, as described previously are often in bad condition without electricity, potable water, telephone connection, etc.

While getting Internet connection is difficult for urban public schools it is almost impossible for rural schools. As described in the previous chapters, Ecuador doesn't have a basic telecommunication infrastructure to make connectivity possible in most of the rural area. Therefore, if one school can get the connection to Internet, it adds more costs for telephonic service. Costs of Internet providers are also so high that many schools can't afford to pay.

According to Sánchez costs relate also to a lack of national policy:

“A school, that begins classes at seven in the morning and finishes at one in the afternoon, using Internet all those hours, is going to have a very high bill. And if we consider that it is the parents who have to pay for all the extra costs of the school, it is unlikely that they want to pay. The only solution is that the State creates a public policy where schools can get Internet for a cheaper price, or to create a 'fixed rate', the same monthly amount for Internet services and telephone”²⁶⁵.

²⁶⁴ Interview in Amaguaña. January, 2005.

²⁶⁵ Ibid.

The program is trying to make some arrangements to allow that schools can connect to Internet paying a smaller monthly amount. For many of the urban schools the connection will be through dial-up, but in the rural sector, Sánchez argues, it will be possible to use wireless mobile technologies. An agreement between various private and public sectors will, however, be required:

“It is necessary now to establish new agreements with the State, telecommunication companies, private sector, school directors and parents. This is a big challenge, and in this point I think that the community needs to be incorporated as well”²⁶⁶.

One solution could be that the local government jointly with the Ministry of Education can find partners with the local or national telecommunication companies. Such partnerships can lead to a win-win situation in which educational aims are furthered, as well as the telecommunication companies' goals, through an expanded user base. Lucía Moscoso, director of the *Edufuturo* web-site, argues that the Ecuadorian government needs to work closely with telecommunication providers to realise the benefits of providing subsidized access for education²⁶⁷.

At the moment, and most likely in the future despite a possible agreement for subsidization, the expectation is that schools must pay for the connections, and as they can't afford to do it, the costs are passed on to parents who generally can't afford the extra financial burden.

There is, in other words, a need for a national public education policy or other mechanism which can improve connectivity within schools, but there is also a need that goes beyond technology regarding basic infrastructure regulation through policy.

According to Sánchez, it is particularly the lack of policy that has stood behind many of the limitations:

²⁶⁶ Ibid.

²⁶⁷ Moscoso, Lucía. Interview in Quito. January, 2005.

“it has been so difficult to lead this program, one of the reasons is because there is not any educative or public policy that help us to carry out this type of educative programs”²⁶⁸.

Limitation: Lack of economic resources to get and maintain technology

In the majority of the public schools of the Pichincha province there are not enough economic resources to maintain computer labs. There is no educative budget designated for this purpose. Every school is designing its own mechanism on how to get funds to improve their schools (for example, how to paint school houses, how to get educative material, how to buy computers and software).

Within the *Edufuturo* program, a group of technicians within the working group have assisted public rural and urban schools to resolve their technical problems. This system of technical support is aimed at keeping the computers working. This has been a way to maintain computer labs in good conditions because most public schools lack the funds for a fulltime computer technician. However, it is necessary to find new solutions to this, because one of the risks of the program is that the government institution won't be able to pay those technicians in the future. Schools must, therefore, find new ways to update and maintain their computers and software.

Limitations at the individual school level

Limitation: Lack of interest by school directors and teachers

The technicians of the program write a daily report on the schools visited and they find great discrepancies amongst staff and schools. According to one of the daily reports:

“Some of the schools are working really hard to incorporate – at least computers - in their classes. But there are many directors and teachers that don't find the use of computers important. They don't care about them. But I can see that maybe they are not interested

²⁶⁸ Sánchez, María Edith. Interview in Quito. November, 2004.

to use them, because they are not clever using computers, but for children they are an easy and quick to learn, maybe they are scared to use them”²⁶⁹.

My own observations at some of the urban and rural schools²⁷⁰, showed that the *Edufuturo* program seemed to be running positively in some schools where the directors and teachers have a positive interest and attitude to learn how to implement and use technology in their classes.

In some of them, for example, they are not only following the technological training that the program offers to them, but they have been able to organize their own technical workshops where they reinforce their knowledge by proposing new concrete activities within the educative curriculum in their schools. Directors have often contracted a specific teacher for this.

In the urban school *Jorge Escudero Moscoso*, for example, the director and teachers have created a technological space that they called a “virtual class” to reinforce and enhance the topic students are learning in the class (e.g. Natural Science, Mathematics, Civic). This mechanism motivates teachers and students to use technological tools.

Students not only have to computer lessons with a specific teacher one hour per week, but also students go one hour per week to the “virtual class”. This place has been designed as a cinema. It has one big screen connected to a computer directed by one computer teacher. Children, together with the regular teacher, can view software, games, web-sites or multimedia encyclopedias and participate in activities that the teacher creates with the group.

Alicia Llumiquinga, a director of a rural school *Bartolomé de las Casas*, also states that for them the *Edufuturo* program has allowed them to incorporate technology within the class.

“We didn’t know the importance of the technology before, but with this program we are in a mutual learning process. Teachers and students are learning how to use computers and software. These are good tools to reinforce content given in the class for the teacher.

²⁶⁹ Interview in Pintag and Amaguaña. January, 2005.

²⁷⁰ I went to some urban and rural schools on December and January, 2005.

I hope that we can continue learning. I am motivating the teachers to use them, and we have designed a schedule to use the software and also the games"²⁷¹.

In the cases of the schools described above, it has been possible to implement technology, because directors and teachers have a positive interest to improve their technological knowledge and to use them within the class. These are, however, exceptions within the program.

One big challenge to carry out the *Edufuturo* program then is to change the mind of directors and teachers in respect not only to technology but also in relation to other parts of the curricula:

"They don't like to update their knowledge. They continue teaching as they did 10, 20 or 30 years ago following the same outlines, old books, old dynamics, memorized methods, etc. It is necessary that they can improve also their teaching skills in order to confront a technological change"²⁷².

Limitation: Lack of skills and teacher training

A lack of skills is a major limitation. To solve this, the *Edufuturo* program has had some collaboration with other institutions to carry out training workshops with the teachers. According to Sánchez:

"it is important to carry out this kind of programs with the collaboration of other sectors of the society, through strategic alliances between the civil society, private sector, governmental and non-governmental, international agencies of cooperation, and of course with the schools involved in the program"²⁷³.

One alliance to carry out the workshops for teachers has been with the Provincial Direction of Education because they have to approve the workshops.

²⁷¹ Llumiquinga, Alicia. Director of the rural school "Bartolomé de las Casas". Interview in Amaguaña. January, 2005.

²⁷² Iturralde, Margarita. Communication officer Edufuturo program. Interview via e-mail. March, 2005.

²⁷³ Sánchez, María Edith. Interview in Quito. November, 2004.

“Once they approve the workshops, the *Edufuturo* people propose the workshops to the schools, many of them want to take them but others not. The schools’ directors are in charge to communicate to the teachers about the workshops”²⁷⁴.

These workshops were organized by *Edufuturo* with some local partners such as the Polytechnic School of the Army, a private enterprise, and Microsoft through the program *Future Kids*.

Teacher training has, however, according to Sánchez, been very difficult to carry out for many reasons:

“Teachers haven’t developed skills to use a computer, most of them are grown-ups, and they find it difficult to learn how to use a computer. Other teachers haven’t found the positive use of a computer or software. They find that computers only make it more difficult to teach. Thus, they don’t show interest, they only come to fulfill a requirement ... our workshops, not only are expensive, but they take a long time until we organize them in a way that teachers can feel motivated ... of course, there are many teachers that think how useful it will be to use technological tools in their classes, and some of them are using Internet for their homework as a tool for research ... training is a slow process that has to continue all the time, and we need to prepare new workshops”²⁷⁵.

Iturralde, communication officer of the program, also comments on the *lack of motivation of teachers*:

“Most of them don’t want to go to the computer workshops and they do it only because they are going to receive a ‘category ascent’ within the Ministry of Education which implies, in many of the cases, a better salary. This is the only reason they go to the workshops, there is no other”²⁷⁶.

Other limitations in the training process has been that teachers come from two different regions: Sierra and Coast where the academic calendar follows different months. When a workshop is

²⁷⁴ Iturralde, Margarita. Interview via e-mail. March, 2005.

²⁷⁵ Sánchez, María Edith. Interview in Quito. November, 2004 (Emphasis added).

²⁷⁶ Iturralde, Margarita. Interview via e-mail. March, 2005.

running some of the teachers are not able to attend because they are on vacation. Another limitation is the *frequent strikes* that prevent carrying out regular workshops. During the last academic year, there were many national strikes which paralyzed the whole country.

According to the program's statistics²⁷⁷, in the 1st stage 1084 teachers were trained in the workshop; and in the 2nd stage 2700 teachers were trained. With 7756 teachers involved in the program only 47% have been trained in the use of computers. In the 3rd. stage of training 11 schools from the Sierra and 8 from the Coast are holding new workshops.

Limitation: Teachers fear of "losing control"

Janeth Carrera, a teacher of a rural school, argues further that once teachers decide to incorporate computers in the classroom there are further barriers including a fear of loss of control:

"Initially when we went to the computer lab, I felt that I was completely losing control of the class, because my students, who are now more adapted to use technology, could quickly access computers and software. I felt that I was losing control with my students ... I have developed some strategies, for example I work with groups, three students and one computer, they have to search for some information that I propose or that they propose in the class projects and they have to find the information and to write it down and give me it to me when the class finishes ... it has been a difficult experience"²⁷⁸.

Carrera raises here as well, however, a change teaching strategies – one of the goals of the program and, I would argue, part of its success. This is reiterated by another teacher of a rural public school, Elvia Achig:

"Nowadays the student has more resources to investigate through the computer and the multimedia encyclopedias. I am not the only one who has the information. They can have the information as well. But they need my direction, they can't be alone, I must guide the

²⁷⁷ Edefuturo statistics. September, 2004. Available at: www.edufuturo.com

²⁷⁸ Carrera, Janeth. Interview in Pintag. January, 2005.

process ... they are more creative using the interactive games because these games make them develop their imagination"²⁷⁹.

Limitation: Lack of educative curriculum to teach technology subjects

According to Iturralde, there is no specific public curriculum that shows how to teach information technology that teachers and directors may follow. The guidelines from *Edufuturo* do not cover all situations:

"Every school has to decide itself the methodologies and strategies of ICT-uses with students, because there is no educative policy related with this subject. *Edufuturo* has given to schools some technological knowledge of how and why they can incorporate and improve their classes through ICTs"²⁸⁰.

Some of the schools seem, however, to be learning and experimenting with technology in their own way. For example, in one rural "pluri-docente"²⁸¹ school, in each class with approximately ten students, they have only one computer. The computer is situated in front of the students, sometimes as a blackboard. During the class day the teacher is using the computer many times with the students, making them to do things with software or with educative games in groups, and showing it to the rest of the class.

Limitation: Initial lack of student skills

Janeth Carrera, a teacher of a rural school, argues that students also may have a fear of the technology:

"Students were afraid at the beginning because they didn't have technological skills, not only to use the computer, but also to show to the rest of their classmates what she/he was able to do with it. However, this experience is enriching my class all the time, of course I have to follow the curriculum program, but I can motivate them through the

²⁷⁹ Achig, Elvia. Interview in Amaguaña. Pintag, 2005.

²⁸⁰ Iturralde, Margarita. Interview via e-mail. March, 2005.

²⁸¹ A school where each two years there is one class. Second and Third year, one class. Fourth and Fifth, one class, etc.

computer and mainly with the interactive games that follow the curriculum ... they like it so much"²⁸².

Limitation: Students don't have more access to technology

Although *Edufuturo* has given workshops to some schools of how can they teach using the computer, and some of them have been able to do it, most of the students of public schools don't develop sufficient technological skills, as they receive limited access and training at school and because the majority of them don't have the opportunity *to use the computers in other places* or to access Internet in their houses.

According to Sánchez, this situation is because they are poor people, living in simple conditions.

"I know some of the parents that live on 1 or 2 dollars daily, can you imagine this? How can they afford to have a computer or to pay a cyber-café ... technology is not the most important thing for them ..."²⁸³.

Limitation: Lack of local content and in Spanish

There has been, and still remains though the situation is slightly improved, a lack of local digital content to use in class. In many of the schools they are using general commercial software: Windows XP, etc. Only a few of them have been able to get other educative software, such as interactive games and multimedia encyclopedias. There is a lack not only of educative digital products that relate to the Ecuadorian educative system and context but there is also a lack of Spanish content in general.

One solution developed by the program has been the creation of relevant local educational contents delivered both by Internet and CD-Rom. These contents are to be used within the classes where teachers can use them to reinforce the information and knowledge that children are receiving in class.

²⁸² Carrera, Janeth. Interview in Pintag. January, 2005.

²⁸³ Sánchez, María Edith. Interview in Quito. November, 2004.

The program has developed 70 multimedia educative games in CD-Rom format, for the 2nd, 3rd. and 4th years of primary school. These CD-Rom are multimedia and interactive games based on the Ecuadorian educative curriculum for each year of the school. These games have been designed using several technological tools: video, audio, music, animation (2D and 3D) and photography which allow the presentation of dynamic software with an advanced graphic design. The stories for the games have being produced by a group of scriptwriters who worked with a group of teachers²⁸⁴.

These local games are situated within the Ecuadorian context where characters, situations, backgrounds, landscapes, and forms of talk are Ecuadorian. Children are motivated to use the games which represent their own cultural, economic and social realities. Children can recognize themselves as Ecuadorians. Teachers are using them as a motivational tool to begin with a new theme of the curriculum.

These educative games are distributed free in the schools that are participating in the program. The software, however, have only been distributed to the schools involved in the program and not to the rest of the schools outside the program locally or nationally.

Another solution that the *Edufuturo* program has considered important to overcome this lack of local content it has been the design of a web-site: www.edufuturo.com. Contrary to the CD-Roms, this web-site is open for all students, parents, teachers or other person looking for themes related with Ecuador. The web-site is divided into various areas: education, culture, news, library, information, and contact.

According to Lucía Moscoso, coordinator of the web-site, they update the contents of the site regularly and are visited regularly:

“During 2004, the *Edufuturo* web-site received 996238 visits. We try to find contents that can be interesting for teachers, students and parents. The contents are written by

²⁸⁴ More information: www.pentaedro.com

Ecuadorian professionals in different areas, who collaborate voluntarily on the site, because the program doesn't have money to pay them"²⁸⁵.

The recurring problem is of course that despite the fact that the program offers a solution to the lack of local content only 10% of Ecuadorians have access to Internet²⁸⁶, and only a few public schools have access to Internet and *use it to search information*.

Limitation: Parents are not involved in the process of ICT-appropriation

In some of the schools with more resources they have contracted a specialized teacher in informatics who teaches not only students but also teachers. This initiative is possible only in few schools, however, because most of them can't afford to pay a specialized teacher. This is mainly because, as mentioned previously, the extra school expenses has to be covered by the student's parents who generally can not afford the extra expense.

In some of the cases, however, it was suggested that parents were not participating because they were not involved in the process itself. Parents and the general community need to be involved within the educative system, mainly because they are the ones who are going to support schools in their extra activities.

d) Conclusions

1. *The addition of technology is not sufficient on its own within teaching and learning processes.* This is a reliable assumption that has allowed the *Edufuturo* program to carry out a series of other extra projects in order to assure this ICT-appropriation rather than simple dissemination. Difficulties have arisen, however, at two main levels. One is internal that concerns the school, teachers, directors and pedagogical methods. Another is external and concerns general factors such as: high cost, lack of infrastructure, low income, lack of economic resources and lack of national policies.

²⁸⁵ Moscoso, Lucía. Interview in Quito. January, 2005.

²⁸⁶ Telecommunications National Council. December, 2004.

These factors are influencing the way in which this program has progressed. External factors prevent the development of more specific strategies and activities in order to introduce technology within the majority of classes.

Following this logic, there is a “vicious circle”. The Ecuadorian government cannot afford to cover the needs of public education and schools. Schools without resources cannot improve schools and cover all expenses. Parents must cover all the extra school expenses but they can't afford to do it because their salaries are low. External factors that reveal a circle of poverty within the Ecuadorian reality are preventing reform which also affect ICT-appropriation. As *Edufuturo* reveals, however, despite these factors it has been possible to take advantage of and incorporate ICTs in the general curriculum at least in some schools.

In other words, as long as there remain many external factors preventing ICT-appropriation, it seems possible to develop a variety of internal strategies that makes it at least partially possible to take advantage of ICTs and to promote an educative change. These strategies must vary depending on the type of school and the resources they have.

Through *Edufuturo*, many of the public urban and rural schools have got computers, software and CD-Roms and teachers have been able to receive basic digital training. These activities are given to schools through tools which they can take advantage of. Thus, the possibility of appropriate technology depends, as well, of the capacity of that school to develop an internal strategy of appropriation – something which has been developed in many schools.

2. *Technologies changes learning spaces and reinforces learned knowledge.* As Torres suggests, however, learning processes need to be considered, within an integral perspective of education where all the community needs to be involved. She explains that education is part of a broader “learning community”:

"The learning community sometimes refers to the school context, and, more specifically, to the school or to the classroom; at others, to a geographical area (the city, the neighborhood, the locality); at others, to a virtual reality and to connectivity mediated by the use of modern information and communication technologies (networks of people, of schools, of educational institutions, of professional communities, etc)"²⁸⁷.

She argues further that it is possible to change education and learning processes through technology but it also implies a look at broader aspects that concern a "learning community", within a context:

"The school system in Ecuador needs a strong reform which not only implies to change and to improve schools with technology but also changing the role of teachers, the educative model, in which all the pedagogical methodologies need to be reevaluated, but also to involve parents in this change, and the community in general ..."²⁸⁸.

3. *A further assumption of the Edufuturo program has been that it is possible to improve the quality of the education within the public primary schools through the implementation of computers, software, some digital content and teacher training.* This assumption requires a continuous analysis about the profits that this program is generating, considering that it is now running for almost 5 years. However, there is not any serious analysis of it, and this prevents not only the ability to see faults and success that this program has, but also makes this assumption less credible about improvements in the quality of education.

Observing some urban and rural schools and their activities with ICTs, the principal actors to carry out appropriation are teachers and school directors. Positive profits of the program have been reached in some schools because teachers, principally, have changed their attitudes with respect to the technology.

²⁸⁷ Torres, Rosa María. Learning Communities: Re-thinking Education through Local Development and Learning. Paper presented at the "International Symposium on Learning Communities", Barcelona Forum 2004. p: 1.

²⁸⁸ Torres, Rosa María. La Profesión Docente en la Era de la Informática y la Lucha contra la Pobreza. UNESCO-OREALC. Santiago de Chile. Agosto, 2000.

This change in attitude has meant that they have designed specific methods of technological approach with their students. Some of these enthusiastic teachers are using computers to reinforce their classes through CD-Rom, interactive games, multimedia encyclopedias, while only few through Internet. Many schools, as well, have carried out some extra workshops with teachers, outside of the *Edufuturo* program, which have allowed them to understand the methods that they could use within their classes to incorporate technological tools better.

The *Edufuturo* program could use these approaches and experiences towards other, less interested schools. Without any rigorous evaluation and analysis, however, this goal is more difficult to achieve.

4. *One of the ideas behind the creation of Edufuturo was to overcome the technological gap between private and public schools, which also implies overcoming a knowledge barrier.*

Digital divides are happening not only between countries, but also within them. In Ecuador, there are some serious divisions that prevent some groups to be part of activities related to ICT technologies.

In the case of education some divisions are clear between private and public schools, urban and rural schools, as well as following linguistic divisions. This situation brings new concerns of how ICT can be implemented taking into consideration marginalized groups and integrating them within initiatives on a more equal level.

Referring back to the social approaches to ICT studies, outlined in Chapter 3, one must consider differences between social actors within Ecuadorian education. This means looking at cultural and linguistic diversities – as approximately 40% of the population are indigenous speaking different languages and dialects. This in turn implies the recognition of cultural development as a dynamic process. Linguistic diversity, cultural identity and local content must not only be preserved but also actively encouraged (all products so far have been developed in Spanish only).

Transferring these concerns to the *Edufuturo* case, one can note that they have considered as their “target” group children of public schools who also represent a low income class. There are still many rural schools, however, that continue being isolated and many students continue being segregated by cultural, ethnic and linguistic differences.

The second half of this chapter picks up some of these concerns with lower income groups by considering a web-based learning program titled *Virtual College*. This is also a formal education initiative. Conclusions across learning programs will be made at the end of the next chapter after considering a further two e-Learning programs within non-formal education.

7.4. WEB-BASED LEARNING. A PIONEER PROJECT OF A *VIRTUAL COLLEGE*²⁸⁹



a) Background to the project

The NGO *Foundation Latin America Virtual Unity* (FUVIA in Spanish) created the first *Virtual College* in Ecuador with a web-based learning platform. This college, at the secondary level, has the authorization of the Minister of Education²⁹⁰ and is sponsored by UNESCO.

The *Virtual College* has been developed with two main objectives:

“First, to promote technical and scientific education, principally through electronic media, on-line modern communication, multimedia and Internet. Second, to contribute to the expansion of the virtual education through advanced solutions on Internet and advanced Informatics technology”²⁹¹.

²⁸⁹ In you want to know more about the Project: www.fuvia.org / www.bachilleratovirtual.org. Contact person: Eduardo Flor, Vice rector *Virtual College* / Giancarlo de Agostini, Technical and expert in e-Learning.

²⁹⁰ Acuerdo Ministerial No. 3507.

²⁹¹ Institutional document of FUVIA. 2004.

Following these objectives, FUVIA has designed a web-based learning program which is directed to people who, for different reasons, haven't finished their secondary school studies. This on-line program is meant to allow people to finish their secondary studies using technological resources.

Giancarlo De Agostini, creator of the on-line platform, has described the program as follows:

- "The organization of the information has been developed through a didactic process related with each one of the subjects and courses of the virtual secondary that follow the Ecuadorian curriculum.
- The generation of contents within the platform are using different tools included in the on-line system: electronic blackboard, electronic mail, links to other web sites, surveys and online exams, didactic and multimedia online resources.
- Students, teachers, and administrators can follow their continuity and evaluation of each one of the activities easily within the platform"²⁹².

The program offers three main specializations: Sciences, Informatics, and Cultural and Social Promotion. The program began on November 8, 2004 with approximately 60 students from different regions and cities around Ecuador. According to Eduardo Flor, vice rector of the *Virtual College*, 50 are still participating actively.

"We want to provide, through scholarships, the economic resources to young workers over 15 years, and people of low economic resources that they have not been able to complete their secondary levels and the possibility to continue studying through the on-line program. The meta population is people with low resources who also can't follow the terms established by the national educative system. For example: people who work on incompatible schedules in relation to the educative center; people who can't afford to cover all the school expenses; people with incapacities, sickness, pregnancy or other health situation that makes it difficult to participate in off-line classes; people who have previous academic failures, discrimination or behavior problems"²⁹³.

²⁹² De Agostini, Giancarlo. Interview in Quito. December, 2004.

²⁹³ Institutional Document FUVIA. 2004.

b) Assumptions and goals

Assumption 1: Technology offers opportunities to marginalized people.

Flor has argued that in Ecuador educative programs that are using web-based technology are primarily private institutions for the university and post-grade levels with high costs to the students. *Virtual College* offers a low-cost alternative to secondary school with scholarships.

Assumption 2: ICTs improve the quality of the secondary education and moreover the education in Ecuador.

The *Virtual College*, according to Giancarlo de Agostini, can contribute to the innovation and improvement of education in Ecuador through this on-line secondary program that uses ICTs as a base²⁹⁴.

Assumption 3: Encouraging the use of technology within a friendly on-line platform which has been built with "free software" which means lower costs.

De Agostini:

"There are few people and institutions carrying out serious research about ICT applications for educative proposes; and without knowledge it is difficult to think that it is possible to have access to it with low costs ... the platform of the college has been constructed with modules of 'free software', and it has been designed technologically to support mainly a constructivist model of teaching ..."²⁹⁵.

c) Limitations and solutions

As with the previous case I have grouped the limitations following primarily external and internal factors. Some of the limitations are general to institutions wishing to begin with web-based learning, while some are specific to the *Virtual College*.

²⁹⁴ De Agostini, Giancarlo. Interview in Quito. December, 2004.

²⁹⁵ Ibid.

General limitation: Foreign web-based platforms with high costs and not locally “friendly”

In Ecuador several educative institutions – e.g. *Andean University Simón Bolívar, ESPE, ICAM, UDLA, USFQ, Central University, UTPL*, among others - have incorporated gradually and through different perspectives web-based learning technology. However, most of these web-based platforms are foreign incurring high procurement and running costs.

According to Consuelo Fernández, coordinator of the on-line program at the private university USFQ, they are using the platform WebCT mainly because it has been proved in other universities in the United States, which in her opinion makes it easier to carry out an on-line program. However, she also refers to the high costs of the platform and the lack of friendly resources within the platform:

“At the beginning we were using only a standard edition that was not that expensive but we have changed to the virtual campus WebCT. We pay more or less 7000 dollars per year which allows us to have 3000 users but we only have 600 users. The problem with the price is that we have to up-date the license frequently, and that makes the cost higher ... The platform is not that friendly and teachers need help all the time to be able to manage the platform technically. It is a problem. However WebCT is an institutionalized platform which means we have good endorsement”²⁹⁶.

The *Virtual College*, which goals are different to the private educative institution, has developed its own web-based learning platform situated on the Internet: www.bachilleratovirtual.org.

According to De Agostini, the platform has been constructed with modules of “free software”, and is “friendly”:

“The teacher stimulates the student; the student goes on building her/his own learning process, alone and in common with the rest of the participants and with the support of the

²⁹⁶ Fernández, Consuelo. Interview in Cumbayá. 2003.

teacher ... our platform is so friendly, everybody can use it with basic technical knowledge"²⁹⁷.

The technological platform or virtual class has been designed exclusively for this project where the participants are producers and users of the information and knowledge generated mutually for them. They are assisted by a system of courses distributed in networks (CMS in Spanish):

"It is mainly an asynchrony modality where all the actors of the educative process can work at any moment and from any place where there is a computer and Internet connection (office, house, study center, cyber-coffee, telecenter, etc). This is a 'virtual class' open 365 days, and 24 four hours, always"²⁹⁸.

Students can access through a password given by the college. Some of the requirements to follow this kind of education are to have computer access and Internet connection. If students are not able to have the infrastructure in their own houses, he or she must go to cyber-café, communitarian telecentres where students have to pay themselves or they get a scholarship.

Limitation: Lack of infrastructure and connectivity

Eduardo Flor:

"The Internet is creating the real and truly possibility to join people that are in different places and conditions. Students and teachers can be everywhere that with only an Internet connection they can be together teaching and learning"²⁹⁹.

The ability for anyone to join, however, continues being an utopian dream. As it is it reinforces the digital and educative barrier present in Ecuador:

²⁹⁷ De Agostini, Giancarlo. Interview in Quito. December, 2004.

²⁹⁸ Ibid.

²⁹⁹ Flor, Eduardo. Interview in Quito. December, 2004.

"In Ecuador, only 30.33 inhabitants per 100 inhabitants have telephone lines; only 31.1 have computers per 1000 inhabitants; and only 10% of the population has Internet access"³⁰⁰.

As described earlier re. Internet costs, a regular Internet provider service for students in the telephonic company Andinanet³⁰¹ costs 10 dollars, only to use 7 hours per day. To this cost we have to add the telephone bill which is approximately 40 dollars per month using non-regular Internet. The total cost will be approx. 51 dollars. This price is extremely expensive considering that the minimum salary is 150US dollars, and many people live below the poverty line.

Limitation: Lack of financing

According to Mónica Váscónez, partner of the NGO FUVIA, they have developed this project with their own economic resources which was a major investment:

"It has been so difficult to find somebody that wants to sponsor this project, because people don't understand at all what exactly an on-line program is and what are its benefits. Only recently, we got the sponsorship of UNESCO"³⁰².

Although the NGO FUVIA has developed this project without any foreign economic support, they have established some alliances with some civil society organizations to promote and carry out the *Virtual College*. They have alliances with: NGO Jatun Sacha which has developed the project *Communitarian Telecentres in the Amazonian Region*; *Information and Communication Youth Center*, and with the *Christian Association of Young People* (The two first projects will be my case studies in Chapter 8).

These alliances, as partnerships of the project, have allowed that these organizations participate as well in the *Virtual College* as promoters, giving scholarships to local students and helping them at the beginning of the on-line process.

³⁰⁰ Data available at: Institute for Connectivity in the Americas. www.icamericas.net

³⁰¹ www.andinanet.net

³⁰² Váscónez, Mónica. Interview in Quito. December, 2004.

In the case of the Telecentre in the Amazonian Region, there are a group of eleven students that are assisted regularly at the telecentre to study in the *Virtual College*. The people that work in the telecentre are actively helping students to follow the course.

These alliances have been fundamental, according to Flor, in order to overcome this lack of financing because these NGOs have sponsored some students.

Limitation: Different educative schedules - Coast, Sierra and Amazonian

As I mentioned above, in Ecuador the educative academic year functions differently between the Coast, Sierra and Amazonian regions. In the Sierra the academic year begins in September and on the Coast it begins in April. These differences create a problem when students travel to other provinces where the academic year has already begun. It could also provide difficulties for on-line programs that are offered nationally.

According to Flor, this problem is overcome through a flexible system:

“The *Virtual College* functions as an open system. This means without division between the Coast and Sierra regions. Each school year will have 40 weeks of duration divided in two periods of five months of 20 weeks each one. Each month we offer one subject. The students could have access to the educative Internet platform any day and hour of the week, and they can realize their works within the platform for the time that they want but they have to go into the platform according to the dynamic of the course, for example in forums students need to be connected at the same time ... they have to complete the required tasks to pass the course”³⁰³.

Within the *Virtual College* students are participating from the rural and urban sectors from several cities and rural communities around Ecuador – e.g. principally Tena, Nuevo Paraíso, Chichico Rumi, Ibarra, Cuenca, and Quito.

³⁰³ Flor, Eduardo. Interview in Quito. December, 2004.

Limitation: Lack of public educative policies

Within the Ecuadorian educative system, there is no public policy that covers on-line education. The *Virtual College project* is a pioneer in Ecuador even though it is following the curriculum of the secondary Ecuadorian program, and students can graduate legally with the endorsement of the Ministry of Education (Legal with the Ministry resolution No. 3507).

According to De Agostini policy will have to follow practice:

“The on-line learning program will have to be validated over time, we are experimenting with this first pioneering initiative, but my point is that technology can allow the possibility to offer an education of quality”³⁰⁴.

General access to this kind of education for disadvantaged young people who don't have a computer or can afford Internet connection is not likely without policy. There is a need that the Ecuadorian State creates serious ICTs-policies and strategies, not only within the formal, physical educative system, but also incorporating on-line strategies for those who cannot participate in regular programs.

Limitation: Resistance to on-line education

According to Fernández, one of the major limitations to incorporating on-line education in the educative system is the resistance of teachers and institutions within formal education in Ecuador such as the *Consejo Nacional de Educación Superior*³⁰⁵ (CONESUP in Spanish) at the university level³⁰⁶.

“Our main problem continues being the resistance to this type of education from the authorities, who don't want to legalize any on-line study”³⁰⁷.

³⁰⁴ De Agostini, Giancarlo. Interview in Quito. December, 2004.

³⁰⁵ The CONESUP is the national council in charge of all the universities of Ecuador. More information: www.conesup.net

³⁰⁶ More information: <http://www.conesup.net/>

³⁰⁷ Fernández, Consuelo. Interview in Cumbayá. 2003.

De Agostini suggests also that people don't understand at all what on-line education through Internet is:

"Maybe because they are not familiarized with technology or with the possibilities that it can generate. Thus, we have decided to incorporate our *Virtual College* with the help of other NGOs that work with young people and are interested in taking advantage of our proposal as well"³⁰⁸.

De Agostini argues further that a first step towards breaking down this resistance might mean combining on-line and off-line teaching:

"... the students could be able to find teaching and learning models which he/she feels more comfortable ... it can be off-line, on-line or a mixture between both ... the *Virtual College* could be a good option"³⁰⁹.

Further limitations relate to students and teachers.

Limitation: Lack of economic resources

To offer one example: Marco Ledesma, a 15 year old youth, who lives in the Ecuadorian Amazonian region in the community called "Nuevo Paraíso", couldn't finish his studies mainly because his parents didn't have enough economic resources to cover all the college expenses. He could only finish the third year of secondary school.

In 2004, Marco was granted a scholarship by the NGO Jatun Sacha to continue his studies in the *Virtual College*. Everyday he goes to a telecentre where he can connect to the web-based learning platform. Marco thinks that this program has been his salvation because he wants to be mechanic, and he needs to complete the college to continue studying (See interview by the author of this thesis on DVD attached to this thesis).

³⁰⁸ De Agostini, Giancarlo. Interview realized in Quito. December, 2004.

³⁰⁹ Ibid.

Marco Ledesma is an example of how this web-based learning program may be an alternative solution to complete his studies, and at the same time, a way that can narrow the digital barrier.

This pioneer program in Ecuador, although it is just beginning, can be a way, under the right circumstances, to democratize learning and knowledge access. Costs remain, however, a primary limitation.

Limitation: Lack of technological skills

Students participating in the *Virtual College* have been able to adapt to the logic of the process of the technological platform.

According to Edwin Shiguango, in charge of the Amazonian telecentre who helps students in the *Virtual College*, the most difficult part at the beginning of this on-line academic year has been the lack of technological skills of students:

“We had to begin explaining them how to use the web-based platform, how to navigate on the Internet, how to find interesting information, how to use multimedia encyclopedias, etc. Every day, however, they are improving their technological skills. They come every day and they are motivated to continue the *Virtual College* ... but we are always there when they come to connect to the college, helping them to resolve the things that they don't understand”³¹⁰.

Ledesma, a student, also argues that the first period was difficult and assistance was necessary:

“At the beginning it was difficult to understand how the college worked on the Internet. And it was also difficult because I hadn't been using the computer for a long time ... but now I know how to use it, sometimes I still have some technical problems, but the people from the telecentre help us to resolve them ... I think the college is good, and through the Internet I can do my homework. It is a library”³¹¹.

³¹⁰ Shiguango, Edwin. Interview in Napo-Nuevo Paraíso. December, 2004.

³¹¹ Ledesma, Marco. Interview in Napo-Nuevo Paraíso. December, 2004.

The use of the on-line platform not only gives the student the possibility to learn how to use the computer and the Internet technically but it is allowing to them to acquire new skills. For example, in this type of education, the student has to change from primarily oral models of communication to writing and reading as primary method, developing these skills as they progress:

“It is not necessary that the student read and write perfectly because the student is going to develop new skills when he/she advances in the on-line education”³¹².

Limitation: Lack of trained teachers in on-line education

Traditional teachers need appropriate and quality training to teach within on-line education. They have to develop new methodological strategies using technological tools, which also means changing the way in which they motivate students.

According to Fernández, coordinator of the on-line program at the private university USFQ, finding and training teachers is not always easy:

“It has been so difficult to find teachers in some areas that want to be involved with on-line education, mainly because they are not prepared to do it and they think it is going to be too much work. However, as we are a private institution, we can afford to motivate them through good remuneration”³¹³.

Within the *Virtual College*, teachers that are going to participate received training on how to use the platform and how they can create contents using different technological tools. This is necessary as teachers are expected to introduce concepts, respond to questions, evaluate performance, facilitate information, and provide quality feedback through the platform. The college, however, has a lack of trained teachers that participate in the project.

Flor argues that training is a fundamental first step for teachers, mainly because they are not meant to reproduce traditional education and curricula. In the case of the project, he adds, it is

³¹² De Agostini, Giancarlo. Interview in Quito. December, 2004.

³¹³ Fernández, Consuelo. Interview realized in Cumbayá. 2003.

still difficult to have regular teachers, also because they don't have enough economic resources to pay them.

According to De Agostini, this type of education also requires more feedback, and each student needs to receive response about his or her work to be stimulated:

“However, there is not an immediate contact with the teacher as the contact is mediated through technology. It is necessary to create new mechanisms of participation for students and teachers. This implies that they have to acquire new skills to be able to do it”³¹⁴.

Limitation: Simple transfer of content to the web is insufficient to motivate students

Fernández suggests that one of the most important issues of this type of education is how the program and its content is built and managed:

“how we are building the educative process, ‘the management of the knowledge’, and one of the most relevant elements ... the content and how it is presented within the platform”³¹⁵.

Content issues are related directly to how to maintain enthusiastic and motivated students in a learning process which perhaps can be a determinant element to carry out a web-base learning program. On the basis of this, contents need to be not only authentic and interesting, but they have to be created through a different logic than traditional off-line education. Teachers need to be able to create those contents in a way that they can motivate their students.

De Agostini argues that this means re-working the material:

“Converting a course to the web is not about just copying over the content and replicating the way the information is delivered rethinking the process and reinventing the course

³¹⁴ De Agostini, Giancarlo. Interview in Quito. December, 2004.

³¹⁵ Fernández, Consuelo. Interview realized in Cumbayá. 2003.

... there are a series of technological tools that help teachers to present a more interesting content: simulations, multimedia, story telling, interactive games, etc"³¹⁶.

Work, for example, needs to be divided into smaller "bites":

"Texts must be divided in tasks and activities using multimedia resources and accompanied by works that students have to do in order to demonstrate that he/she is getting knowledge"³¹⁷.

d) Conclusions

1. *Technology offers opportunities to marginalized people.* Bonilla and Cliche argue that:

"In our divided and fragmented Latin American societies marked by social inequalities, the trend will be towards further exclusion of the more vulnerable sectors, which are precisely the ones that are also at the margin of information and communication circuits"³¹⁸.

The *Virtual College* has developed an on-line secondary college open for all. The idea behind this has been to ensure that marginalized people that haven't finished their studies can do it through the Internet. This idea follows a social perspective, as Bonilla and Cliche argue, for the need to incorporate vulnerable sectors of the society to the use of ICTs. The *Virtual College* offers scholarships to students. They are, however, only supporting 25 students of low incomes.

As Castells suggests, motivation is also a concern:

³¹⁶ De Agostini, Giancarlo. Interview realized in Quito. December, 2004.

³¹⁷ Ibid.

³¹⁸ Bonilla, Marcelo and Cliche, Gilles (Eds). Internet and Society in Latin America and the Caribbean. FLACSO/International Development Research Center. Ecuador. 2004. p: 4.

“If people find a good reason to use ICTs, it can then motivate them in their use. People need to understand for what purposes technology can be useful for them, then they are going to be able to exploit it for their own development”³¹⁹.

Although there are many infrastructure limitations that are preventing such appropriation for marginalized people, pioneer projects such as the *Virtual College* can be good alternatives to promote the use of ICTs with a double objective. First, being able to learn to use ICT, and second having the possibility to finish secondary studies. Again, however, the limited number of students able to follow the course is a serious limitation to such a general statement.

2. *ICTs improve the quality of the secondary education and moreover the education in Ecuador.*

Bonilla and Cliche, following a social approach, suggest that many sectors of the society have been re-evaluating the role of technologies. They:

“stand out as a counterweight, in as much as their entry on this new scene is marked by participatory criteria, which is part and parcel of the democratizing role they play. And to this extent they empower individual and organizational abilities to speak out, form alliances, negotiate, or resist, in order to coordinate legitimate social appropriation of such technologies”³²⁰.

In the case of the *Virtual College* which is promoting a change through technology and education, it seems that they are building a strategy that can allow people to expand their knowledge (and gain secondary education) through the use of ICTs.

De Agostini suggests that another strategy to carry out the *Virtual College* has been to form alliances with some non-profit organizations that work with young people. These organizations provide students with some resources to be part of the college, and they are also supporting them. These mechanisms mean that the college continues working

³¹⁹ Castells, Manuel. Conference in Barcelona. February, 2004.

³²⁰ Bonilla, Marcelo and Cliche, Gilles (Eds). (2004). Op. cit. p: 8, 9.

positively. In this sense secondary education has been improved in Ecuador. A general improvement is difficult to argue for with such a limited test.

3. *Encouraging the use of technology within a friendly on-line platform which has been built with "free software" means lower costs.* The fact that the *Virtual College* is promoting the use of "free software" is a way to overcome some barriers that not only concern technology but also to a broader issue of corporate domination. As León, Burch and Tamayo suggest³²¹, transnational companies, located mainly in north countries, have conquered markets and exploit peripheral countries with high prices. León, Burch and Tamayo add further that transnationals want to control the virtual space, which is considered like a strategic field to extend business to everybody and to operate new markets. Issues such as who owns platforms like Google, to what extent censorship takes place, and the possibility of licencing emails, raise these type of questions. Free software in a country like Ecuador is also an important intervention considering licencing costs and corporate alliances that require regular updates of software.

A way to overcome such a "subordinate" position of consumers, and as the *Virtual College* proposes, the use of an independent virtual platform (built with "free software") allows the possibility to have access without buying a particular licence – such as those of Microsoft.

This chapter considered two main initiatives: the *EDUFUTURO* program – a formal educative initiative that has been developed in some primary schools in the Pichincha province - and the *Virtual College* – a pioneer initiative of on-line education which encourages the use of technology as a new way for marginalized groups to finish secondary level. In the next chapter, I will add two non-formal educative initiatives carried out by the *Central Bank of Ecuador* - the *Information and Communication Youth Center (CICJ* in Spanish) case - and by the NGO *Jatun Sacha* - the *Communitarian Telecentres* case situated in the Amazonian province of Napo.

³²¹ León, Osvaldo; Burch, Sally and Tamayo, Eduardo (2004). "Se Cayó el Sistema: Enredos de la Sociedad de la Información". ALAI. Quito. 2004. (My translation).

CHAPTER EIGHT

e-LEARNING - SECOND PART

NON-FORMAL EDUCATION

8.1. INTRODUCTION

In the previous chapter, I considered two case studies within formal education that suggest that technology is not in itself sufficient in order to ensure a technological “revolution” within primary and secondary education. These cases raised also other internal and external concerns that suggest the need to look at educative reforms within the Ecuadorian educative system in general as well as internally within schools amongst teachers, directors and parents. The case of the *Edufuturo* suggested also that if technology change learning spaces and reinforced learned knowledge, there is a need for a broader understanding of the “learning community” in order to improve the quality of the education within the public primary schools. The case of the *Virtual College* pointed out that on-line education can be an alternative way to study. The *Virtual College* encouraged the use of technology looking at real mechanisms of appropriation, such as the use of “free software” and alliances between organizations as cooperative ways of ICT-appropriation. It pointed out also, however, the need for learning support in local, physical spaces.

While the previous chapter focused on formal education, this chapter is concerned with non-formal education. It is divided into four sections.

The first section is the introduction and outline of this chapter. The second section discusses the *Information and Communication Youth Center (CICJ* in Spanish) case, which is part of the program “Working Boy” (Muchacho Trabajador) sponsored by the Central Bank of Ecuador. These centers have been created for young people between 15 and 20 years and they offer workshops in basic and advanced informatics, citizen formation and alternative communication workshops in photography, radio, and video. This case raises the importance of non-formal education spaces for young people to make them feel more confident as part of a learning process without being in a college. ICTs, in this space, have been seen a “hook” for a broader

educative goal where citizen formation and processes of participation are also seen as important in order for the youth to “revalue” their status as young citizens within society.

The third section focuses on the *Communitarian Telecentres* situated in the “kichwas” communities of Chichico Rumi and Nuevo Paraíso in the Amazonian province of Napo. This project has been developed by the NGO Jatun Sacha³²² with the financial support of the oil company Perenco. These telecentres offer computers and Internet connection and the NGO has developed an educative project with schools and young people in order to teach them how to use ICTs. This case offers the opportunity to consider whether telecentres are viable alternative spaces to incorporate disadvantaged communities. The *Telecentres* project goes beyond simple infrastructure technology and raises new issues in relation to social development, cultural factors and sustainability.

The fourth section offers conclusions to Chapters 7 and 8, including some of the practical and theoretical conclusions across the cases.

8.2. INFORMATION AND COMMUNICATION YOUTH CENTER (CICJ IN SPANISH)

a) Background to the project

The Information and Communication Youth Center (CICJ in Spanish) is a project created within the program called “working boy” (Programa del Muchacho Trabajador – PMT in Spanish) which is funded by the Central Bank of Ecuador.

The program “working boy” began in 1983. It was the result of a resolution of the state bank to create a bridge between the economic policy and the social policy of the State.

With a base in the International Convention on the Rights of the Child³²³, the program “working boy” has citizenship as central to its institutional mission:

³²² More information: www.jatunsacha.org

³²³ More information see: www.unhchr.ch/html/menu2/6/crc/treaties/crc.htm

“to promote respect of childhood and youth rights in Ecuadorian society and to bring about the citizen formation of girls, boys and young people that live under marginalized conditions, in order to extend their opportunities and to encourage their social participation which will in turn contribute to the development of the country and the construction of a new democratic culture”³²⁴.

In 2001, within this program, they created *Information and Communication Youth Centers (CICJ)*, functioning in eight cities around Ecuador: Ibarra, Tulcán, Esmeraldas, Cuenca, Guayaquil, Quito, Lago Agrio y Ambato. Five of them are in the charge of the local governments and three of them are directly under the Central Bank through the program PMT. The centers in charge of the Central Bank will need in the future to find their own mechanisms of sustainability.

The *CICJ* centers function as places of non-formal education and they offer workshops in basic and advanced informatics, citizen formation and alternative communication through workshops of photography, radio, and video.

These centers grant scholarships to young people between 15 and 20 years that are in marginalized conditions. They come mainly from public high schools with little access to technology.

There is an annual public call to find participants for the project. According to Cevallos, the director of the program, they make one call per year mainly to marginalized young people in public high schools, and also they make the call in public through some youth organizations. According to an official description of the program:

“We work with schools not as part of their formal education; we are independent centers of non-formal education that works out of class hours We make an agreement with the principles, we sign a contract and the students apply to participate, not all of the schools want to participate. The young people, which we choose according to their interest, are granted scholarships for one year. Thus, they can come to the workshops

³²⁴ Taken from an institutional document CICJ-PMT. Cevallos, Fabricio. 2004.

after high school. It is not obligatory for them, but there is a expectancy to attend when they have decided to take the workshop”³²⁵.

The young people that participate in the project receive in the first workshop basic and advance informatics and citizen formation where they talk about different themes such as: self-esteem, sexuality, prevention of drugs, leadership, etc. After this first training, there is a second workshop where they can choose between different alternative communication workshops: photography, radio production, web-design, and video.

The center functions as well as a technological service center where students can come to use computers and Internet. The students that have been granted a scholarship receive a carnet and they can use the center for free, other students can participate or use the center but they have to pay a low amount to use the Internet (less than a cyber-café). All of them have to pay for printing.

In this analysis, I will refer mainly to the *CICJ* centers situated in Quito and Tulcán which I visited in 2004.

b) Assumptions and goals

Assumption 1: Technology is a “hook” for youth participation.

The *Information and Communication Youth Centers* were created as reference spaces for the formation, expression and participation of young people. These centers were created at the beginning to focus on ICT tools that support the learning process of the young people so that they acquire not only technological skills, but lead to youth participation in general.

Benálcazar, technical assistant of the *CICJ* project, describes this move:

“the project was created at the beginning with the support of NetCorps America to train youths in the use of information technologies because it was its focus, technology. However, we decided to incorporate to the project training in citizen formation, self-

³²⁵ Ibid.

esteem, sexuality, drug prevention, citizen participation and leadership, as main parts of the project, of course the technology remains always the 'hook' for young people"³²⁶.

Assumption 2: A non-formal space is more likely to engage and interests youth.

The centre staff believe that youth feel motivation to participate in the center because this is occurring in a non-formal space, where they don't have to follow the pressure of formal education with its focus on an educative curriculum. They feel motivation, also, because they meet other young people with similar interests.

Assumption 3: Technological tools contribute to democratic processes.

According to Fabricio Cevallos, coordinator of the project, *CICJ* has led to greater awareness in young people and therefore have contributed to democratic processes:

"The project has led to young people being able to fortify their values learning about their rights. Our objective is to create responsible citizens not only for themselves, but in relation to other people and their city. We think that we can fortify democratic processes where young people can participate, and of course, we believe that technological tools are contributing to build this"³²⁷.

Assumption 4: Non-formal educative spaces are equally valid as formal ones.

"*CICJ centers*, as a non-formal space, have a huge potential to overcome not only digital but social barriers"³²⁸.

c) Limitations and solutions

I divide this section into the following components: economic, technological, political and individuals.

³²⁶ Benalcázar, María Alexandra. Interview via e-mail. March, 2005.

³²⁷ Cevallos, Fabricio. Interviews in Quito and Tulcán. October, 2004 and January, 2005.

³²⁸ Cevallos, Fabricio. Interviews in Quito and Tulcán. October, 2004 and January, 2005.

Economic, technological and political context

General limitation: ICTs only as the main focus and learning goal.

Solution: A combination of technology and social development.

A determinist technological perspective is often one of the main drivers in the development of ICT projects. These projects tend to focus solely on the technological aspects of the projects with skills focused on software. The funding for the *CICJ* project was also originally from the US with a straight technological focus. Technology, however, as I have argued throughout this thesis, is only one of the elements that needs to be considered in order to carry out a project. As I referred to above in the e-Government Chapter, technology can't be seen outside of a process of organizational and human change, where people are using technology through different creative means.

Sofia Lanchimba, a 17 year old girl, for example, argues that the courses in citizen rights were useful to her in addition to the technology aspects of the program:

“one of the most interesting things to come to this center has been to have the possibility to meet other young people with my own interests, preoccupations, dreams ... also, we receive a workshop of citizen formation in which we discuss about all kind of themes and also we propose to do things”³²⁹.

Unlike many programs, it was then the combination of technology and social development that led to the appeal amongst the participants.

General limitation: Lack of existence of projects for young people in general but particularly projects in which they feel they are agents in their own development.

Solution: A project for young people with young staff and a model in which youth “take over” their own learning.

³²⁹ Lanchimba, Sofia (17 year old). Interview in Quito. January, 2005.

There are not many projects that involve young people,

“this situation comes from the stereotype idea, I think, to see young people as a problematic age, almost as delinquents”³³⁰.

Youths, however, feel motivation to participate in the *CICJ* centers because this is occurring in a non-formal space where they don't have to follow the pressure of formal education. Also, they feel motivation because they meet other young people with similar interests:

“I like to come here because it is the first time that somebody considers us, I feel free to come and to express my opinions, and also I have met a lot of people from other high schools, and we are not rivals anymore, you know, between high schools we always have differences, but now together we are making projects ... it is a lot of fun”³³¹.

The *CICJ* project has a small group of people working in the project who are employees of the *Central Bank of Ecuador*. This group includes one coordinator; two teachers (they call them “mediators”) for informatics and citizen formation; two administrative people; and some extra teachers (radio, photography, video) that the project contracts for the workshops.

This alternative approach can be a way to create bridges between formal and non-formal education in order to improve the quality of secondary education in Ecuador.

This working group has designed and carried out all the strategies of the project and, according to Benalcázar, all the group is constituted by young people that can work more than the normal working hours:

“We are leaders of the project, but only at the beginning of the workshops because the youths after the first process are able to lead their own projects. I mean, they want to create projects as well, and some of them are leading with their own groups to carry out those projects ... one of those was a big photographic exposition that they organized for

³³⁰ Cevallos, Fabricio. Interviews in Quito and Tulcán. October, 2004 and January, 2005.

³³¹ Natalia (17 year old). Interview in Quito. January, 2005.

themselves ... of course we – as mediators - are giving them all the support that the project requires”³³².

General limitation: Lack of quality and innovation in the educative system

Solution: A changing role for teachers – an acceptance of alternative information sources

According to Cevallos, this project has been driven by the demands of the young people who have been energized by what they are trying out. The working group of the project is highly concerned with the quality of the education that they are giving to them.

Cevallos argues that greater expectations of teachers has come about in part due to ICTs:

“Internet is playing also a fundamental role, because the teacher is not anymore the only one that it has the information, but students can gain access to plenty of other information, and then expect for better teaching to their teachers at the high school”³³³.

Students go to the *CICJ* two days per week. The space where the center functions is well equipped and there is a supportive, collaborative and creative environment to learn and discuss about youth topics, as mentioned previously. Contrasting this space with the formal space class, young people feel a lot of motivation to come to the *CICJ*. As Andrés, a 17 year old youth, argues:

“I like to come here because everything is more relax than in the high school. It is a nice place to make friends and to learn the computer and to talk about other things. I prefer the center a hundred times more than the high school ...”³³⁴

In other words, technology may lead to greater information access and changes in the education system but in general only within particular structures such as the *CICJ* centres where the access and use of technology is guided in particular ways.

³³² Benalcázar, María Alexandra. Interview in Quito. October, 2004.

³³³ Cevallos, Fabricio. Interviews in Quito and Tulcán. October, 2004 and January, 2005.

³³⁴ Román, Andrés (18 years old). Interview in Quito. January, 2005.

Limitation: Lack of infrastructure and connectivity

Solution: Alliances and urban placement

As described at the start, the *CICJ* centers are situated in eight cities around Ecuador: Ambato, Esmeraldas, Guayaquil, Ibarra, Lago Agrio, Quito, Cuenca y Tulcán. Every center has been created following the same approach of Quito's center, which is the leader of the project. Each center, however, has adopted new strategies according to their own perspectives and contexts. As well, in each of the cities arrangements with local governments have been made in order to make the project economically viable.

In Quito, the center was in the Central Bank's building where the program "working boy" also was carried out. On January 2005, a new space was created, a "yellow house" for the center and another program called "Panita" with working class children. The center has its own space and will function independently.

The Quito center is equipped with computers, software, Internet connection (24 hours), printers, scanners, multimedia library, photography lab, radio cabin, and video and editing suite. In every city the infrastructure varies according to the economic resources that they have been able to get through alliances with local governments and other organizations.

In Tulcan, for example, the center functions in the "House of the Youth" sponsored by the local government of the province, who has given the center space and some infrastructure to create the project.

The situation of Quito's and Tulcan's *CICJ* centers are not, however, representative for other centres. In other provinces the lack of infrastructure and connectivity continues to be a major limitation. This is one of the reasons why the other *CICJ* centers have also been created in cities and with institutions that can afford to have at least basic infrastructure and connectivity. In other words, there would be a problem extending this program to more rural areas.

Limitation: Lack of funding

Solution: Alliances and international collaboration

In Quito the *CICJ* center functions, as described above, with the economic support of the Central Bank of Ecuador. It has as well received support from Microsoft, the Germany Agency for Cooperation (GTZ) and the Belgium Cooperation.

According to Cevallos, finding additional support is essential:

“The project *CICJ* is looking for some new partnerships that can support the project, not only in Quito. We are also thinking of the other centers. However, it has been so difficult to find resources. Locally because the private sector which could be able to give us some support is not interested to invest in youths. Internationally support is difficult to find, because we don't know how to find them. The case with the local governments is that they have limited budgets ...”³³⁵.

The other centers have been financed through a variety of ways, such as the sponsorship and support of local municipalities, local governments and the Central Bank's offices in the provinces. Not all of them, however, are equipped as the center in Quito, but at least each center has been able to create a center with basic infrastructure.

Even though the project is running actively, they are constantly trying to get more financing to improve centers and workshops. According to Benalcázar, technical assistant of the *CICJ* project, however,

“financing is the main problem that we confront, because I think that the possible sponsors want to see quick results, but this is a process of formation of young people, it is not that they are going to see big results, because more important is how much this training will impact in the lives of these young people and in their immediate surroundings, not how much they learn about technology or things like that ...”³³⁶.

³³⁵ Cevallos, Fabricio. Interviews in Quito and Tulcán. October, 2004 and January, 2005.

³³⁶ Benalcázar, María Alexandra. Interview via e-mail. March, 2005.

Limitation: Difficult negotiations with other stakeholders and sustainability

Solution: Transfer or sharing of information between centres

According to Cevallos, the Quito centre is a good example for other provinces but it may not be financially viable to create other spaces³³⁷:

“Although, we have negotiated with local governments and other institutions to make the creation of the centers in other provinces possible, *this negotiation has taken a lot of time*, and in some cases they don’t want to support all the things that the projects requires ... as leaders of the project, we don’t have all the economic resources to develop this project in other cities, but we can give them the knowledge of how we are creating our centre and how they can do it”³³⁸.

Alliances have been important to carry out this program, but Quito as the leader of the project can’t afford to give support to provincial projects for a long period. They have looked for strategic alliances in each of the cities to ensure the long-term sustainability of the program. The local municipalities and governments have been good alliances to assure the sustainability of the project but often have limited finances themselves.

In Tulcán, the center functions within the “Youth House” which has the support of the local government of the province as mentioned above. ICTs are also incorporated within other spaces where they can be useful tools for collaboration. In Tulcán, for example, a group of youths have created a theater group in the “Youth House”, and although many of them are not participating directly in the *CICJ* project, they are collaborating with some ideas about the general development of the center.

Limitation: Little capacity in relation to the demand

Solution: Careful choices and plans for expansion

According to Benalcázar, the demand is for greater than the amount of places they can provide.

³³⁷ Actually, they have been created the *Information and Communication Youth Center (CICJ)*, in eight cities around Ecuador: Ibarra, Tulcán, Esmeraldas, Cuenca, Guayaquil, Quito, Lago Agrio y Ambato. Five of them are in the charge of the local governments and three of them are directly under the Central Bank through the program PMT.

³³⁸ Cevallos, Fabricio. Interviews in Quito and Tulcán. October, 2004 and January, 2005.

“One big problem that we have in Quito is that the annual call that we make is insufficient for the number of youths that are interested in the project. We have only capacity, for infrastructure reasons, to receive to 600 people. But, we receive a lot of applications, more than 1000”³³⁹.

Individuals

Young people

General limitation: Youths as not seen as important citizens

Solution: Engaging youth in community activities

The thinking behind the centre is that the impact, not only of economic disadvantage, but also of social stigma, requires seeing youth in a new light, where they can be considered as citizens who can have ideas and propose creative action. Projects such as the *CICJ* are seen then to have a potential to overcome not only digital, but also social, barriers.

Youths are learning, not only how to use technological tools: software, Internet, games, radio, video, etc, but social perspectives where they can talk in “dynamic groups” about different themes that they are interested in as youths. In this dynamic, they are finding more meaning to ICT-use and appropriation outside of the school activities.

Diego, a young that participates in the *CICJ*, describes his experiences:

“I have learned a lot about technology in the center, but most important has been to understand that technology is important when you use it with meaning. For example, we create radio programs telling stories about youth refugees and all the situations that they have to confront ... it has been a great experience, and also it was very hard to hear all those sad stories”³⁴⁰.

³³⁹ Benalcázar, María Alexandra. Interview via e-mail. March, 2005.

³⁴⁰ Arias, Diego (21 years old) Interview in Quito. January, 2005.

When they finish the different workshops, they have to participate in “citizen action” in their neighborhood, high school or with a group of people. This action means that they transmit the things that they have been learning in the center to other people, and at the same time people that work in the project can evaluate how successful the project has been for the youth.

This non-formal educative space is promoting an equal educational opportunity through adequate facilities, resources and technology but provides, as well, dignity and respect in relation to being both a youth and a citizen with stories to tell and ideas to create.

Limitation: Using technology without any critical position

Solution: Seeing technology as a tool for social analysis and action

The majority of the young people that go to the center are motivated at first by the possibility to learn about ICTs without being in a formal space. When they begin to receive the other workshops related with citizen formation and participation, and alternative communication (radio, photography, video) their perspectives change also about technology itself:

“I knew how to use the computer from before, but the first motivation, however, was to learn more about technology. When I began to receive the other workshops, I understand that technology itself is not important if we don’t assume a critical position about how to use it, not only as an individual but as a group”³⁴¹.

One of the challenges of the project has been to ensure that the young people assume critical positions, not only in relation to technology, but also the information that they are receiving through the Internet and a critical position regarding how they can use ICTs to develop other projects that can involve other social issues to the benefit of youths and citizens of the country.

Edwin Castañeda, mediator in the Tulcán center, argues for this need to teach the youth to use ICTs in a broader way:

³⁴¹ Ibid.

“Using the computer only for chat, downloading music, or sending e-mails, is not a mistake, but can mean that we are sub-using the technological tools ... I believe that we have to work on how to teach ICTs thinking about other educational issues. We have to show young people that technologies are only useful when they are giving them some meaning within their own lives ... in the case of Internet, for example, there is too much information that sometimes they don't know how to deal with. Then, it is necessary that we, as teachers, be able to orient their searching, in order that they can get knowledge. Information doesn't mean knowledge”³⁴².

The empowerment acquired for the young people through this project has been both raising their levels of self-esteem and participation not only within their schools, but also in their homes and districts. Many of them were or have become active leaders in youth organizations. The possibilities to learn how to use ICTs outside of technological determinist perspectives may then offer one route to overcome pervasive discrimination and marginalization facing many subgroups in society.

In the center, youths have developed various proposals: photographic expositions, radio programs, web pages, videos, music bands, theater plays, solidarity actions, etc. They are developing a new set of skills and social practices with a cultural vision.

According to Cevallos, youth empowerment may have greater benefits for society:

“... the empowerment that they are getting through all these new alternative processes of non-formal education will help them be critical citizens in the future, with creative ideas and motivation”³⁴³.

Limitation: Desertion of the young people

Solution: Attempts to help student organize their schedules

Despite all the benefits not all students complete the workshops at the center. Benalcázar admits that many young people leave after few weeks:

³⁴² Castañeda Edwin. Interview in Tulcán. January, 2005.

³⁴³ Cevallos, Fabricio. Interviews in Quito and Tulcán. October, 2004 and January, 2005.

"The main reason for this is because they are in high school (4th and 5th year) and they have too many obligations there, and they can't manage to organize both, high school and center. Because, they have to come here out of high school hours, and this means to organize their free time, and many of them can't do it. Of course, it is a problem when we begin the process and they desert ..."³⁴⁴.

d) Conclusions

1. *Technology is a "hook" for youth participation.* The *CICJ* project has gone beyond simple instrumental and technological assumptions about ICTs, because one of its main goals has been to teach to young people, not only how to use technology within a supportive, collaborative and creative environment, but as well, the project has incorporated other aspects such as citizen formation and participation in order to create a dialogue and discuss issues relevant for youth.

This position emphasizes, as a social approach proposes, the need to overcome techno-mercantile ideas and replace them by a vision where the central axis are human beings, their rights and their fundamental necessities. Social research focuses on "human rights" where ICTs are used to promote respect and the reinforcement of human rights.

2. *A non-formal space is more likely to engage and interest youth.* Technology has some "aggregate values" and potential to motivate people in other directions. This also requires, however, seeing youths in a new light, where they can be considered as citizens who can have ideas and propose creative action.
3. *Technological tools contribute to democratic processes.* Within the *CICJ* project, young people have been able to participate in decision-making, which has empowered them and given them a freedom of expression. They have expressed their own opinions through different ways of ICT-appropriation that engage their broader context – e.g.

³⁴⁴ Benalcázar, María Alexandra. Interview via e-mail. March, 2005.

through different community actions, high school workshops, expositions, web-sites, radio programs, to mention few.

This active participation has transcended the space of the center, to high schools and districts, and has created a public process, where youth opinions may begin to be validated in their surroundings.

Democracy means a political system in which people make the basic decisions on crucial matters, the citizens in a democracy, as the ultimate decisions makers, need full or sufficient information to make intelligent choices. Through the *CICJ* centers youths have been able to participate and get important information with the help of ICTs. This gives them equal opportunities to act in a more democratic way. Technology, in this case, however has also been used to promote democratic *participation* and led to public acts where the values and proposals of the young people have been recognized.

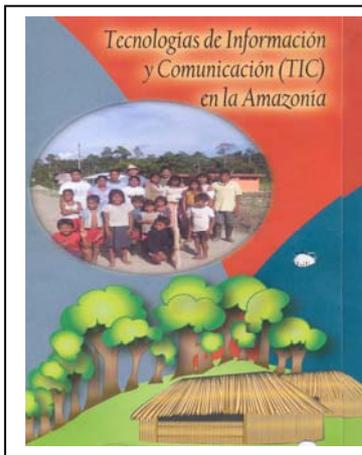
4. *Non-formal educative spaces are equally valid as formal ones.* Although this analysis is not about specific education outcomes themselves, this assumption can be seen to be valid in this case as technology, within this non-formal educative space, has been used to educate young people and add more values beyond the technological ones that formal education usually doesn't cover.

Young people within this non-formal space are taking a critical position to ICTs, in the way they can use it, with what purposes and are critical to the information that they are receiving through the Internet.

Through the interviews carried out, it does seem that the empowerment acquired by the young people within this non-formal space has raised their levels of self-esteem and participation. They have developed various creative proposals: photographic expositions, videos, music bands, theater plays and solidarity acts. These communicative products and actions are perhaps equally valid ways of learning than the ones received in formal spaces.

The project is limited, however, through lack of infrastructure, space and funding. It is not viable at the present stage in rural areas. The following case study offers an alternative look at a rural initiative.

8.3. COMMUNITARIAN TELECENTRES IN THE AMAZONIAN REGION: TECHNOLOGY CENTERS FOR SOCIAL DEVELOPMENT³⁴⁵



a) Background to the project

On August 2004, two *telecentres* of digital technologies in the kichwas communities of Chichico Rumi and Nuevo Paraíso situated in the Amazonian province of Napo were inaugurated. This project has been developed by the NGO Jatun Sacha³⁴⁶ with the financial support of the oil company Perenco.

The NGO Jatun Sacha has been working in the Napo area for more than nineteen years. One of the ideas directors of this NGO had was to create telecentres with computers and Internet connections with the objective that communities can be connected. This idea, however, was difficult to carry out for many years because in the Amazonian region there is no basic telecommunication infrastructure. Nevertheless, they decided to carry out the project.

The NGO has a Biological Research Station situated in the Amazonian region and some of its lands were given as concession to the oil company Perenco to build the pipe line called “Yuralpa Puerto Napo”, in exchange for benefits for communities around the area. This in turn allowed the NGO the possibility of infrastructure and Internet connection through the fiber optic that the oil company laid close to the communities. The oil company has signed a contract with the NGO to support the *Telecentres* for ten years.

³⁴⁵ In you want to know more about the Project: www.jatunsacha.org. Contact person: Pamela Quiñones, coordinator of the project.

³⁴⁶ More information: www.jatunsacha.org

These *Amazonian telecentres* are spaces with computers and Internet connection that facilitate ICT-access to communities. The *Amazonian telecentres* are also offering digital training to children, youths and adults, who are learning basic Microsoft software: Word, Excel, PowerPoint, and Paint. These *telecentres*, as well, are functioning as spaces where people from the community can communicate by chat and e-mail, and to search information through the Internet.

The NGO Jatun Sacha has made an alliance with the NGO FUVIA to participate in the *Virtual College* project within these *telecentres*, and eleven students are participating from these communities as described briefly in the previous chapter.

Context

In Ecuador, rural communities are the most disadvantaged. Technology advances are concentrated mostly in urban areas. The internal telephonic density in Ecuador is not equitably distributed in all the provinces of the country.

According to the Telecommunication National Council of Ecuador,

“the Amazonian provinces are the least favored with telecommunication infrastructure, the average of telephone lines per 100 inhabitants is 2 telephone lines, which means that the majority of the population has not access to telephone, nor to Internet connection”³⁴⁷.

Amazonian communities seldom have telephone lines and connections. Additionally their basic conditions are extremely poor. The majority of the rural communities don't have electricity, potable water, hospitals or good basic infrastructure such as: all-year roads, sufficient housing or public transport. In recent years, due to the oil operation, they have been victims of environmental pollution and re-location of their lands.

The kichwas communities of Chichico Rumi (150 inhabitants) and Nuevo Paraíso (300 inhabitants) are situated in the Amazonian province of Napo. 80% of the inhabitants of these two

³⁴⁷ Statistics of the Telecommunication National Council of Ecuador. December, 2002. Available at: www.cntel.com.ec.

communities are young people between 0-35 years. According to Pamela Quiñones, coordinator of the project, these are “new communities”:

“All these communities are young communities which have been created approximately in the last 10 years, almost all the people that live there are young inhabitants”³⁴⁸.

b) Assumptions and goals

Assumption 1: Telecentres are important public spaces for disadvantaged communities.

Pamela Quiñones, coordinator of the project, argues that:

“Community people want that these *telecentres* will be communitarian spaces, not only with telecommunication services which are difficult to have in this zone, but also a meeting space for local communities to use, train and so on ... we are going to work from now together with communities to develop new strategies to expand our first objectives”³⁴⁹.

Assumption 2: Telecentres are not only technological spaces but educative and communitarian spaces.

Quiñones:

“*Telecentres* have not been conceived only as technological spaces, but as educative spaces where children learn how to use the technology and to reinforce their knowledge through the Internet and the use of interactive games”³⁵⁰.

The project involves a series of courses in order to teach people how to use technology and also workshops related with sustainable development through productive activities in their own communities.

³⁴⁸ Quiñones, Pamela. Interview in Quito and Napo. November-December, 2004.

³⁴⁹ Ibid.

³⁵⁰ Ibid.

Assumption 3: Technology by itself is insufficient to bring about broader social change.

According to Quiñones, the project has been created with three main components:

“Firstly, the implementation of appropriate technology and Internet connection. Secondly, the familiarization of computers and software to children, youths and teachers of communities through some courses designed by an info-teacher. Thirdly, the development of a social plan to develop productive projects that improve the quality of life of these communities”³⁵¹.

The proposal has three important goals: The fortification of socio-organizational structures; the construction of processes of planning and communitarian development; and the design, construction, implementation and technological maintenance of telecentres.

c) Limitations and solutions

Economic and social context

General limitation: Lack of continuity. Not long-term sustainable project.

Solution: Collaboration and alliances with industry and communities.

Many *telecentres* have been unsuccessful due to a lack of continuity. Let me offer an example of a telecentre in the Esmeraldas province called *Telecentres for street kids*. This project for the first several months was carried out with educators and kids and the participation of the NGO Chasquinet. There was, however, a lack of clear objectives and methodologies with regards to bringing together educators, kids, education and computers. There was also no model for sustainability for the telecentre.

According to Iván Caicedo, the coordinator of the project in Esmeraldas,

³⁵¹ Ibid.

“the ONG Chasquinet’s first idea was good. They got the money to bring the computers and to implement them. But it is not just a matter of machines; it is also a matter of sustainability, people and kids. It couldn’t go well”³⁵².

Also, the educators of the grassroots organization who were on charge of the computer’s labs couldn’t find a financial way of sustainability of the telecenter without the ONG’s help. It caused internal financial problems, fights between educators and kids, technical troubles, and instability with the people of the district.

These problems couldn’t be overcome and two other problems caused the total failure of the telecenters: the computers were robbed and two telecenter’s houses suffered the inundation due to the rain season of the “*Fenomeno del Niño*” and they had to close. Today, there is one telecenter which are not functioning, and according to Iván Caicedo, they are not using the computers because they don’t know what to do with them and how to use them reinforcing the kids’ education.

This brief case of the Esmeraldas *telecentres* exemplifies many of the unsuccessful ICT *telecentres* projects happening in Ecuador. Obviously this case must be understood in its own context and process but it offers, at least, a comparison with the *Telecentre* project in the Amazonian region.

The project has fulfilled three components its first goal of connections and infrastructure and is carrying out the second one of basic digital training to children, youth and teachers. The community people take part periodically in some computer lessons with the operators of the *telecentre* who had received training previously. Many people from other communities are going to the *telecentre* to learn how to use the computer:

“They have to walk long distances, crossing by boat or taking a bus to arrive to the telecentre”³⁵³.

³⁵² Caicedo, Iván, coordinator of the project in Esmeraldas. Interview in Esmeraldas. July, 2003.

³⁵³ Quiñones, Pamela. Interview in Quito and Napo. November-December, 2004.

The project has specific courses for children, youths, teachers, community people, and women. Children from the schools go to the *telecentres* one day per week from 7:00 to 13h00 to receive computer lessons. The operator shows them how to use the mouse, computer and software. The project has also other educative software that children, youths and adults may explore.

Eleven youths, as well, as mentioned previously, go to the *telecentres* to follow the *Virtual College*, which is an agreement that the NGO Jatun Sacha has made with the NGO FUVIA. They go from Monday to Saturday, two hours per day. Operators and technical staff assist them with their *Virtual College* studies.

The rest of the students, teachers, and people from other communities and women may receive two hours training daily:

“We are creating mechanisms where they have to take part regularly at the beginning, later when they know the basic things, they can continue coming on different schedules”³⁵⁴.

Although the project is developing many strategies to incorporate ICTs within the communities, it will be important to look this at project as a *long term project* which will require broader objectives and perspectives. *Telecentres* have different uses. In this case, they wanted to go beyond the technological to product development thereby further increasing the need for long-term planning and continuity.

General limitation: Financing and sustainability

Solution: Alternative income and payment through participation

As mentioned above, the *telecentres* have the economic support of the oil company Perenco, and it will have its support for ten years more. All the salaries of the NGO’s people in charge of the project and all the expenses of the project are covered.

According to Quiñones, however, sustainability remains an issue:

³⁵⁴ Ibid.

"Telecentres are just beginning, and we have the support coming from the oil company and Jatun Sacha (NGO). We have to develop, however, jointly with the community new mechanisms of sustainability. We had created a 'telecentre regulation' where all the people have to pay something, no more than 10 cents of dollar. Of course, payments are not only monetary, they can clean the center, the computers, or they can bring some food (banana, yucca, etc) when we organize some 'mingas' (workshops) ... we are finding different mechanisms to maintain the *telecentre*"³⁵⁵.

Another way to make *Telecentres* sustainable is through the tourist sector:

"Tourists can come to use e-mail and Internet paying something. Also if we are able to develop other projects we will need to find more resources"³⁵⁶.

Limitation: Lack of infrastructure and connectivity

Solution: Agreement with industry

The oil company Perenco has also given the project other forms of infrastructure: computers, scanners, and printers. In addition, as mentioned above, the company had made all the technical arrangements to give them the fiber optic that they have to connect communities to the Internet.

They have 24 hour Internet connections. Both communities: Chichico Rumi and Nuevo Paraíso have been the first communities to have Internet in the zone, which has been a major success according to Quiñones because many people from other communities are using the *telecentre*.

They have built two specific places where *telecentres* are functioning throughout the day. These places are equipped with furniture, air conditioner (because in the zone the temperature oscillates between 30 to 40 centigrade) and electrical plant because communities don't have regular electricity service. Each telecentre has 11 computers and Windows XP software:

³⁵⁵ Ibid.

³⁵⁶ Ibid.

“Recently, we have incorporated Linux, and later we are going to train the operators in its use”³⁵⁷.

According to Quiñones, maintenance remains, however, a problem:

“There are always technical problems to resolve but we are building mechanisms to fix these damages quickly. For example we want to train some people from the community or the same operators to resolve some of the common problems”³⁵⁸.

A reminder again that although these *telecentres* have been able to get computers and Internet connection, they are exceptions in the rural communities of the Amazonian.

General limitation: The creation of ICTs projects without involving or considering the ideas of local people.

Solution: Tight alliances and negotiations

Amazonian Telecentres, despite being a good alternative project for communities due to the potential for narrowing the digital divide in remote rural and disadvantaged communities, did not come about through any prior spontaneous local demand, but as an external initiative of the NGO Jatun Sacha. Therefore, the challenges now that the *telecentres* have been created, are to create the necessary acceptance, use and appropriation by the local beneficiaries.

According to Quiñones, previous experience by the NGO in the area was essential:

“The participation of the NGO Jatun Sacha, which has worked for more than 19 years in the zone on other environmental projects, meant that *telecentres* were well received by the communities, but only two of them decided to participate, Chichico-Rumi and Nuevo Paraíso situated on the borders of the Napo river”³⁵⁹.

³⁵⁷ Ibid.

³⁵⁸ Ibid.

³⁵⁹ Ibid.

Shiguango, the *telecenter*'s operator in the community of Nuevo Paraíso argues that poverty led to their participation:

"The telecentres were well received by the community, because we are so poor that we expect that any project can contribute to improve our community ... I think this is one of the reasons that people were happy to have a *telecentre* here. Children and young people are more happy"³⁶⁰.

The NGO assumes that *telecentres* as development projects can be spaces where community people can improve their quality of life through the development also of other productive projects.

Technology must be integrated into society and become part of people's daily lives if they are to have real benefit.

Individuals

Limitation: Lack of specialized people and conditions to carry out the project.

Solution: Training of local people

According to Quiñones, human resources have been equally difficult to access as financial ones:

"It has been difficult to find specialized and competent professionals related with ICTs, education and development that also want to live in the Amazonian region where conditions are not the best. We have contracted two technicians that live close to the Amazonian communities who give permanently technical support to the *telecentres*, and also we contracted one Cuban ICT-teacher who carried out the first training to operators and some people from the community. However, the ICT teacher quit recently because he found a better job"³⁶¹.

Salaries must also compensate conditions and are therefore high:

³⁶⁰ Shiguango, Edwin. Interview in Napo-Nuevo Paraíso. December, 2004.

³⁶¹ Quiñones, Pamela. Interview in Quito and Napo. November-December, 2004.

“We have to offer a good salary because the conditions here, in the Amazonian, are not the best roads are bad and it takes time to arrive to the *telecentres*, and it rains a lot and it is wet and hot ...”³⁶².

Limitation: Lack of content in local languages

Solution: Content creation

The Amazonian communities of Chichico Rumi and Nuevo Paraíso are bilingual communities that speak Kichwa (the local language) and Spanish. The digital training that they are receiving is given in Spanish, and it is a benefit that operators can speak kichwa, because some of the explanations are given as well in the local language.

There is a need, however, to create or find content which is relevant to users given their cultural background, and accessible according to their reading, writing and language skills. Old people and some adults who don't speak reasonable Spanish are not able to participate in the *telecentre* also for that reason. Younger generations are bilingual, but in order to preserve their language, it is necessary to upkeep local languages.

Limitation: Old people are not interested in participating.

Although both communities, Chichico Rumi and Nuevo Paraíso are “young communities” that have been in existence for only 10 years, with young inhabitants, some of their inhabitants are old people. These are in general not interested about *Telecentres*.

Bolivia Chimbo, operator of the *telecentre* in Nuevo Paraíso, argues that this age gap also relates to language but is not limited to it:

“children and young people come every day to the telecentre, they know now how to use the computer and Internet ... we need now that they can learn more with software or CD-Rom ... the old people they are not interested to come or learn. I think one of the reasons

³⁶² Ibid.

is because they don't speak Spanish at all, only kichwa (local language), but also they have their own beliefs and computers are totally out of their beliefs"³⁶³.

Limitation: Difficult negotiations and lack of participation

Solution: Further negotiations and attempts at finding the reasons behind the lack of participation

The project is trying to make more alliances with principals of schools in other communities, the tourist sector (private sector) of the area, and with the local government of the province to follow this initiative and offer them the *telecentre* installations and digital training courses. Quiñones argues, however, that this offer is not always appreciated:

"Trying to negotiate with people is difficult. I went to talk with a principal of a school of another community, and he didn't want to participate. I think he is jealous of the community where the *telecentre* is situated ... but I'm going to insist"³⁶⁴.

Limitation: Socio-cultural factors

Solution: Equal representation and broader social content

The project has emphasized gender issues. They want women to come to the *telecentre* as much as men. In the *telecentres* operators include two men and two women from the community that speak Spanish and Kichwa. They know therefore the culture of the community, and reflect gender differences.

The people from the NGO are also talking with women in order to incorporate them in the *telecentre*'s work. Women's participation, according to Quiñones, however, is less than men, mainly because they have to do all the domestic work and they therefore don't have time to participate at the *telecentre*.

Another limitation is that in this area, there are high levels of alcoholism and domestic violence. This situation has meant that the project incorporates a comprehensive dialogue and strategy that

³⁶³ Chimbo, Bolivia. Interview in Napo-Nuevo Paraiso. December, 2004.

³⁶⁴ Quiñones, Pamela. Interview in Quito and Napo. November-December, 2004

includes workshops on complementary issues, such as contraception, citizen formation, rights, leadership, and emotional intelligence.

According to Andy, the project has had a concrete effect on levels of domestic violence:

“Many men are not drinking that much, because instead, they are coming to the *Telecentre* and we spend a lot of time in Internet ... I believe they forget to drink when they are here”³⁶⁵.

Telecentres are trying to generate community dialogue and create new projects also in other areas. For example in Chichico Rumi, the NGO works together with the community and its leaders to create a communitarian store. Quiñones argues that these two projects benefit from each other:

“We think that both are not related, but I think that since the *telecentre* began they have been more enthusiastic to carry out new projects that can give some benefit to the community ... also I think for them it is important that the communitarian work becomes part of their culture”³⁶⁶.

Limitation: Low self-esteem

According to Quiñones, people from these communities have low self-esteem and they think that they are not able to use computers, Internet, or to improve their lives.

“We have to educate them in many ways, not only technologically, but in a constructivist manner where they can develop creative ideas and find opportunities”³⁶⁷.

³⁶⁵ Andy, Alfonso. Interview in Napo-Chichico Rumi. December, 2004.

³⁶⁶ Quiñones, Pamela. Interview in Quito and Napo. November-December, 2004.

³⁶⁷ Ibid.

d) Conclusions

1. *Telecentres are important public spaces for disadvantaged communities.* Telecentres in Latin America have been providing ICTs to a significant number of disadvantaged people, rural communities and poor neighborhoods. In some countries – e.g. Brazil, Chile – governmental national plans have been developed to implement telecentres in the entire country. In the case of Ecuador, there are few telecentres initiatives that have been able to succeed. The main reason for this has been the lack of clear objectives and funding that allow them to sustain in the long term.

The NGO Jatun Sacha, creator of the *Amazonian telecentres*, has had the goal to incorporate ICTs and develop alternative spaces for Amazonian communities. From my research (visit and interviews with local people) it seems that *telecentres* can be alternative spaces through which community people can improve their education and improve their lives learning how to use technology, to get information, to know about productive activities, and to recognize that they are able to participate actively.

The constitution and development of this space, however, raises a series of other considerations that considering the limitations, will need to be looked at in order to carry out a broader social project.

Some of these considerations, beyond technology, refer to economic and socio-cultural factors where cultural and linguistic diversity within these communities are essential issues to be considered. Following a social approach this means recognizing and encouraging difference.

“... the cultural development as an evolutionary and alive process, linguistic diversity, cultural identity and local contents must be not only preserved but also actively encouraged”³⁶⁸.

³⁶⁸ Siete Exigencias: Principios Prioritarios Propuestos por la Sociedad Civil. February, 2003. Available at: www.movimientos.org/foro_comunicacion/

ICTs seen as a new language or system of representation and communication where the transmission of cultural or symbolic capital can empower citizens can be a creative way through which local communities can create their own local content in order to respect and develop its culture and linguistic diversity. It can make citizens more comfortable and identify with the *telecentre*, and moreover to see technology in a broader sense in line with their own traditions, beliefs and local environment.

2. *Telecentres are not only technological spaces but educative and communitarian spaces.*

Another assumption behind the *Amazonian telecentre* project has been that through technology, people, principally children and youth, will be able to learn how to use computers, software and Internet and to acquire knowledge from them.

The *Amazonian telecentres* have thus organized different courses for children and young people to teach them how to use technological tools through computer lessons using software and games, the on-line college, and through Internet. Children and young people are the most interested to learn. They feel motivated to go the *telecentre* daily in order to take lessons. Therefore, the *telecentre* is providing to the community with some knowledge and information that they could not able to have. It will be necessary, however, to think more about of how this technology is going to continue be useful after they have acquired some technological skills.

The NGO is trying to develop a new project where children and youth can use specific software about different relevant topics. This situation, however, is difficult, principally because software is expensive and, as Quiñones argues, they are foreign software that sometimes include words that are difficult to understand. As well, people that come to the *telecentre* are bilingual, speaking Spanish and their native language, which need to be taken into consideration.

My observations were that *telecentres* did seem to be communitarian spaces where people met to talk, chat and to share ideas. Many of those I talked to were enthusiastic and wished to share these experiences with their children and friends.

Andy, operator of the telecentre in Chichico Rumi, suggests that the Internet has allowed him to find out about other places in the world and to share the information with his friends:

"We knew about the explosion in the twin towers in New York, but we didn't know exactly where the place was situated. Now, with the Internet, I navigated in Google and I found New York, the twin towers and they were a lot of photos about the explosion ... it surprised me to see that and I shared this with my friends"³⁶⁹.

3. *Technology by itself is insufficient to bring about broader social change.*

Technology still, in my opinion, can't improve the quality of life of people, if people don't have a clear idea of how to use technology for their own benefit. Although, the *Amazonian telecentre* is developing a series of strategies, such as digital training, on-line education, and offering services, they need to develop broader ideas of how they are going to use technology and telecentres as communitarian spaces to improve the conditions of these poor communities to any great extent.

Some of the initiatives that can change or improve communities, perhaps do not have anything to do with ICTs, in the sense that there are broader social and economic needs to be overcome: lack of basic services, undernourishment, diseases, lack of hospitals, few work possibilities, to mention a few.

My "pessimist" view is that, although *telecentres* can find their own means of sustainability, ICTs under most conditions can't improve broader social needs. These need to be considered first. Oil companies, for example, could offer not only ICTs but other support that allow to these communities to improve their education, basic services and health.

³⁶⁹ Andy, Alfonso. Interview in Napo-Chichico Rumi. December, 2004.

These concerns will be carried over to the study of civil society and empowerment of rural communities in the next chapter.

8.4. CONCLUSIONS – E-LEARNING

8.4.1. Practical

e-Learning refers most often to the adoption of electronic media in a learning scenario. Technology, however, is only one of the elements within the learning and teaching process which is more complex and requires going beyond the traditional paradigms of training. As well, e-Learning scenarios in many cases may be found not only in formal education, but also in non-formal spaces where people can acquire skills and knowledge.

I sum up here then some of the practical conclusions that the case studies highlight in the previous two chapters in relation to e-Learning.

- ICT-appropriation within education implies looking at all the elements and people involved in the process of the use and eventual appropriation. In the *Edufuturo* program, school directors and teachers were the most important actors in order to generate such appropriation within public schools.

Torres, an Ecuadorian teacher, argues also that teachers have a pivotal role:

“they can be the executors of a reflexive, creative and dynamic change in their classes, where they can incorporate ICTs as tools that favor the development of active pedagogies and the encounter between the pedagogy and the game, which makes more attractive learning in the class, not only for students, but also for teachers ... teachers need to be actors of change, and they need to be continuously updated, trained and better paid”³⁷⁰.

³⁷⁰ Torres, Rosa María. La Profesión Docente en la Era de la Informática y la Lucha contra la Pobreza. UNESCO-OREALC. Santiago de Chile. Agosto, 2000.

- ICTs can be used to change learning spaces and reinforce learned knowledge. Some of the schools involved in the *Edufuturo* program were able to change learning spaces using computers, software, interactive games, and few of them through the Internet. Teachers, in these new spaces, are using technological tools in order to reinforce learned knowledge in their classes. In order to do that, it has been necessary that teachers acquire certain skills of how to create a dynamic space between students and technology.
- e-Learning offers opportunities to marginalized people that can be able to have access to information and knowledge. Referring to the *Virtual College*, students, principally with scarce resources, are being able to follow a web-based learning program in order to finish their secondary schooling.

In order to do that it has been necessary, not only to create a friendly Internet platform, but also has required that students develop technological skills in order to follow classes. Teachers learn new pedagogic methods in order to offer quality education, and technicians develop constantly the platform according to the needs of students and teachers.

The *Virtual College*, as well, has developed a strategy of appropriation that includes *alliances* with other organizations in order to incorporate disadvantaged students to this project. Many organizations that work with poor young people are taking part of this project and it can be a collaborative mechanism in order to carry out a variety of ICT initiatives.

- Non-formal education spaces, such as the *CICJ centers* and the *Telecentres* in the Amazonian region, offer as well important educative activities through ICT-appropriation with broader social objectives than the formal educative systems are able to fill.

Referring to the *CICJ* project, young people are not only concerned about technology but also about other social issues that empowered them to become important and creative citizens. Technology has been a “hook” for this project in order to offer young people other kinds of education such as citizen formation workshops that have fortified their values as young citizens and where they have learned about their rights, and been given a voice to participate in society.

For example, they have done some photographic expositions, music festivals, debates of different topics (drugs, youth participation, refugees) and radio spots.

- The *CICJ* project, as well, has added other meaning to ICT-appropriation when young people are able to appropriate technology in a reflective way.
- In the case of the *Telecentres* situated in the Amazonian region, ICT-appropriation within education has pointed out the need to consider broader social and cultural issues where cultural and linguistic diversity must be encouraged in order to ensure cultural development of these communities. This project suggested that it is important to develop digital contents with cultural pertinence and in the local language, in order to preserve cultural values and the *kiwcha* language.
- e-Learning projects require, as the case studies showed, to carry out constant evaluations in order to be aware about the lacks, faults and mistakes that are preventing their development. As the *Edufuturo* showed, for example, the lack of a serious analysis makes contradictory its results and it is also prevents them from considering some improvements in the approach to the public schools that are not carrying out any activity incorporating ICTs.

According to Iturralde in relation to the *Edufuturo* program:

“while 92% have computers, only 70% of the equipped schools are familiarized with computers”³⁷¹.

In both cases these are only estimated percentages that are not followed with a concrete and actual analysis within schools.

- If the Ecuadorian governmental ministry in charge of education and public schools can't afford to sustain public schools, it will require the collaboration of other actors and social sectors to do it. Parents and the community need to be involved in the educative system, not

³⁷¹ Iturralde, Margarita. Interview via e-mail. March, 2005.

only in relation to the education of their children, but in finding sustainable mechanisms to support extra activities and expenses.

One initiative in some of the schools to improve infrastructure, for example “mingas”, where parents help to paint, to fix and to maintain the physical spaces of schools instead of cash. Although, it is quite unthinkable that this kind of mechanism may be used when government has the duty to support schools, within the Ecuadorian reality, alternative solutions need to be considered in order to improve education.

8.4.2. Theoretical

- **ICTs and education within a broader social approach.**

In Ecuador, there is a broader need for educative reform, beyond a reform based on ICT-implementation through computers, software and the Internet. The Ecuadorian State, which has as its national priority the reinstatement of economic and political stability, has largely ignored most of the social and educational problems. This situation implies that there is a need to find alternative solutions to improve the educative system in general and moreover the Ecuadorian society, which may include ICTs.

Torres argues that there is an urgent need for educative improvements in Ecuador:

“In recent years, within a new framework of globalization and hegemonic neo-liberal projects, where there has been a development of ICTs and major expansion of poverty and social exclusion, there is a need for deep changes in the educative institutions and the role of teachers ... in this change it is necessary to incorporate not only formal systems, but also other social actors within non-formal spaces that also are able to lead to improvements in education”³⁷².

I have brought a concern about context to all of the case studies and all of the results have pointed out the need to look at broader social and human aspects. Social approaches to ICTs

³⁷² Torres, Rosa María (2000). Op. cit.

point out that we have to ask ourselves how can we ensure that ICTs will have a positive impact on human welfare and to ensure that their positive impacts will not be outweighed by the negative ones. More information must not lead to denigration of local knowledge.

- **Digital barriers prevent ICT-appropriation within education.**

ICT-appropriation within formal and non-formal education is not only related with the incorporation of basic technological infrastructure and connectivity, as the case studies showed, but as well it involves individuals: students, teachers, parents, community people, who are going to carry out such appropriation within schools and communities.

Torres argues that the key is what people do with ICTs and their potentialities:

"ICTs, in general, can be used both ways: to impel pedagogical innovation or to reproduce the same old pedagogical teaching only using computers, but the positive potential of how they can be useful within education, will depend on people who take the decisions and it involves everybody teachers, students, parents, community, technical staff, researchers ..."³⁷³.

Although, technological access is only one part of an educative reform, it will be important also to understand all the other internal and external factors that restrain a reform. This situation refers also to the main public educative institution, the Ecuadorian Minister of Education, which needs to be improved as well in its internal organization of disorder marked by bureaucracy and lack of resources.

Digital barriers as the result of broader social and economic barriers are widening. Digital barriers must lead to the search for specific mechanisms to overcome it through more adequate use of ICTs. That includes the inclusion and participation of new social groups within ICT-dissemination, looking as well for some mechanisms of united work between different groups of the society.

³⁷³ Ibid.

The e-Learning case studies have showed that even though there are different ways of use and appropriation within formal and non-formal education that are highlighting ways of change and may lead to overcome some barriers, it is a work that requires the participation of different social actors which need to work together.

In the case of the *Edufuturo* program, for example, many of the public schools are able to be part of ICT projects because governmental institutions, schools directors, teachers, parents and children are acting together within this change. The *Virtual College* also has made agreements with other organizations in order to carry out the project. This joint work, although not overcoming all the barriers, at least are promoting ICT-use in a more feasible way.

Non-formal spaces have demonstrated as well that they can overcome not only some technological barriers but educative when they reinforce other social and human education areas that formal educative spaces don't cover.

- **ICT are not enough for an educative change, they have to be part of a “learning community”.**

Torres argues that e-Learning or education and ICTs in learning processes needs to be considered within a broader integral perspective of education. She proposes that technological tools are only one element within a broader “learning community”.

According to her, a “learning community” can enhance development and not simply an ICT-appropriation. She suggests that it can happen in three different levels:

- *“Local community level:* developing the community's learning and educational and cultural resources, including the development and transformation of school institutions.
- *Intermediate levels:* developing a rich and diverse body of community-based learning experiences, articulated, evaluated and systematized so that the lessons learned can be shared with other contexts. Community leaders, education agents and

professionals linked to both public and private institutions, the media and public opinion in general must be informed of such experiences.

- *Policy-makers*: giving visibility to, networking and promoting experiences amongst key people and institutions who make decisions over education policy at both national and international level³⁷⁴.

Referring to the case studies, although they are looking at broader issues than simply ICT-appropriation, these initiatives are not sufficient to bring about serious educative change. In order to do this, it is necessary to look at broader scenarios and actors, where governmental educative institutions can also be involved. In other words, all of the levels described by Torres need to be involved particularly in the Ecuadorian context where central government is in a weak position.

Torres argues further the learning community must include parents and other members of the community:

“It is necessary that they learn ICTs through a dialogic and social process, where they can have a dialogue and discussion. They need to develop affective skills as well, and in this respect technology can’t do much. In my opinion, ICTs can reinforce education, but it will be necessary to involve other aspects with family and community ... aspects of affection and security”³⁷⁵.

Real appropriation is more likely to be seen by other civil society actors. It will be the focus of the next chapter.

³⁷⁴ Torres, Rosa María (2000). Op.cit. p: 5.

³⁷⁵ Ibid.

CHAPTER NINE

CIVIL SOCIETY ORGANIZATIONS AND NETWORKING

9.1. INTRODUCTION

In the two chapters about e-Government, I developed some central arguments of this thesis. First, ICT-appropriation goes beyond simple additions of technology. Second, ICT-appropriation needs to be considered on the background of a context that includes economic, social and cultural factors. Third, ICT-appropriation requires the participation of various social sectors, and it is not exclusively a matter of governments.

These arguments were developed in the e-Learning chapters. There were also, however, new arguments about ICT-appropriation brought out here. First technology may add many aggregate values to the learning and teaching process but should involve an entire "learning community"³⁷⁶. Second, ICT-use and appropriation within other types of education: on-line and non-formal may help, again under certain circumstances, to overcome digital barriers and to promote other types of collaboration. Third, beyond the technological perspective, ICTs in education may support other social aspects of education, such as: citizen formation, socio-cultural aspects and democratic participation. Fourth, ICT must be incorporated within particular conditions in order to support broader human, social and economic needs.

In this chapter, I look at civil society organizations and some of their ICT initiatives. Civil society organizations, which represent many grassroots organizations and people, have been playing an important role within the Ecuadorian society. These groups are tired of being ignored and marginalized not only economically but socially by governments, and are no longer keeping silent. The constitution of many civil society organizations in Ecuador has led to the formation of different communication and information networks that have allowed them to be organized not only locally but within international scenarios. Many of these networks have been created through the use of ICTs.

³⁷⁶ Torres, Rosa María. Learning Communities: Re-thinking Education through Local Development and Learning. Paper presented at the "International Symposium on Learning Communities", Barcelona Forum 2004.

This chapter is divided into six sections.

The first section is the introduction and outline of this chapter. The second section describes a brief history of social movements and civil society organizations in Ecuador and ICT-appropriation, not only as a background of the case studies, but to point out the importance that these groups are playing within the Ecuadorian society in order to reformulate political systems, and work towards social stability and democratic participation.

The third section considers the *International Mangrove-Network* (RedManglar Internacional in Spanish) which has the participation of several Latin American and international NGOs, and many grassroots organizations. In September 2003, the *National Coordinator for the Defense of the Mangrove Forest* (C-CONDEM in Spanish) in Ecuador, became the Executive Secretary of the *Network* for a period of two years. This case study points out that technology use by itself is not a central concern. In order to carry out information and communication strategies within the *Network*, however, ICTs are playing a fundamental role. The study of the network also suggests that networking and web-sites may lead to increased participation in the public sphere, but that participation is not necessarily equal within networks.

The fourth section focuses on the pilot project called *Manglar ICT*. This project has the participation of two grassroots organizations from the Esmeraldas province: the *Fondo Ecuatoriano Populorum Progressio* (FEPP in Spanish) situated in Limones and the NGO *Foundation of Ecological Defense* (FUNDECOL in Spanish) situated in Muisne. It aims to systematize a series of experiences by local communities with the support of ICTs to be shared within communities, with grassroots organizations and within the *Network* described above. This project suggests that ICTs, as tools, can be useful for grassroots organizations and people in order to share communitarian local experiences and thereby be part of broader public spheres and debates. It points out as well that by getting some ICT knowledge people from grassroots organizations may be able to improve their work with communities.

The fifth section discusses the *Infodesarrollo.ec Network* which is made up of several non-governmental and governmental Ecuadorian and International organizations which work with ICT

matters in different sectors. This network is concerned principally with ICTs and has two main objectives. First, to share information, knowledge, methodologies and learned lessons about the use of ICTs. Second, to influence public policies in the use of ICTs in different sectors of Ecuadorian society. The study of this project points out the need to develop information and communication mechanisms that can guide the complex dynamic relationships between organizations within networks. It suggests also that if a network wants to deal with many aspects, in this case ICT issues, it is important to design a strategy that organizes the work between members.

The sixth section sums up some practical and theoretical conclusions concerning the case studies of this chapter.

9.2. BRIEF HISTORY OF SOCIAL MOVEMENTS AND CIVIL SOCIETY ORGANIZATIONS IN ECUADOR AND ICT-APPROPRIATION

In Ecuador, the landscape in which civil society is involved has been changing radically in recent years. According to Victoria Juan Candial, the force of the indigenous movements³⁷⁷ has been evident since the 90s when the most powerful indigenous uprising ever seen in Ecuador took place:

“CONAIE³⁷⁸ was the masterpiece of the revolt and took advantage of the situation to express the claims of its organization, summarized in a list of sixteen demands Together these demands outlined a program for indigenous control over their own affairs which culminated in a petition to amend the Ecuadorian Constitution in order to proclaim it a multinational state”³⁷⁹.

The strength and discontent of the indigenous people in Ecuador again came to the attention of other social groups. On January 21, 2000, when organizations of indigenous people and sections

³⁷⁷ Approximately 30% of the Ecuadorian population is indigenous people, according to the “National Secretary of Indigenous Subjects and Ethnic Minorities”. Cited by: Juan Candial, Victoria. Paper: From Resistance to Organized Social Movements. University of Essex, Department of Government. September, 1995. p: 2.

³⁷⁸ Confederation of Ecuadorian Indigenous Nationalities created in 1986 (CONAIE in Spanish).

³⁷⁹ Juan Candial, Victoria. Op. cit. p: 8.

of the Ecuadorian military capped weeks of national protests with a bloodless coup against the neo-liberal and anti-popular government of ex-president Jamil Mahuad.

Once more, as José Antonio Lucero describes, 2001 began with thousand of indigenous protesters paralyzing the nation's roads in protest of the same set of neo-liberal policies that Mahuad had sought to implement:

"This time, however, the armed forces were on the side of the state, not society. Employing greater repressive force than had previously been used in this protest-prone but usually non-violent country, the government sought to quell the demonstrations. This strategy proved ineffective, however, and the state found itself negotiating with indigenous groups that displayed both organizational might and broad national and international support"³⁸⁰.

Indigenous mobilization can be seen as contributing to the development of democratic citizenship in a state characterized by neo-colonial social structures. This situation has shifted the role of civil society who have pushed for more institutionalized representation through the constitution of social movements, non-governmental organizations and grassroots organizations.

According to León, Burch and Tamayo, new social actors have organized across regional, ethnic, religious, and ideological divides. Social movements are contributing and fostering democracy within indigenous and new stakeholders organizations, promoting a stronger ethic of responsibility within Ecuadorian society.

A broad range of civil society organizations are establishing new spaces for dialogue, like the various social organizations assemblies at local and national levels, increasing the opportunities for Ecuadorians to propose new ways of organizing and acting:

"They call for autonomy and identity, decentralization and participation, horizontal relations and respect for differences, as opposed to manipulation, control, dependence,

³⁸⁰ Lucero, José Antonio. Article: High Anxiety in the Andes: Crisis and Contention in Ecuador. Journal of Democracy. Johns Hopkins University Press. 2001. p: 1.

hierarchies, regulation and bureaucratization. In the framework of this repositioning, the logic of 'networking' is beginning to soak in"³⁸¹.

The term "networking", as I defined in Chapter One, can have a broad range of interpretations. A common denominator, however, is the joining together for a common goal. It may also include, according to León, Burch and Tamayo:

"The rejection of hegemonic positions and recognition of the constraints of each organization's or entity's specific field of action and, therefore, the need to associate with other like-minded partners, under shared values, to enhance impact and scope"³⁸².

In Ecuador, new assembled stakeholders have begun to build new national and international spaces for dialogue, combining protest with proposals, and incorporating technological tools, such as the Internet:

"Internet and its decentralized, flexible structure, which makes it possible to establish social interactions that transcend distances and borders, in real time, has opened up tremendous potential to quicken the most varied, unimaginable initiatives, with all kinds of contents. In particular, it encourages the setting up of forums or communities of interest ... established on-line ..."³⁸³.

With this brief background, I turn to my first case study.

³⁸¹ León, Osvaldo; Burch, Sally; and Tamayo Eduardo. Social Movements on the Net. Agencia Latinoamericana de Información (ALAI). Quito. September, 2001. p: 69.

³⁸² *Ibid.* p: 70.

³⁸³ *Ibid.* p: 74.

9.3. INTERNATIONAL MANGROVE-NETWORK³⁸⁴



a) Background to the project

In 1993, a meeting was held in Ecuador attended by representatives of several countries from all over the world. The focus was the problems caused by the destruction of the mangrove forests. Marianeli Torres, coordinator of the network, explains how this meeting eventually gave impetus to the creation of the

network:

“The Ecuadorian organizations raised at this meeting the necessity to create a network to work jointly in relation to this environmental problem. This first proposal for a network began to be considered seriously in 1996, when several Latin American, European and Asian environmental and communitarian NGOs met in Choluteca, Honduras to analyze the situation of the mangrove forest and the influence of the shrimp industry”³⁸⁵.

Some of the conclusions of this event were the accelerated environmental deterioration, major ecological damages caused in coastal communities, the lack of planning for an integral marine-coast development, and the demand of a moratorium on the shrimp industry.

In August 2001, Latin American organizations met again in Choluteca, where they made an analysis of the first meetings, and summed up that their demands were still effective and it was urgent to pursue them in collaboration. They created an international network called *International Mangrove-Network* in order to work for the defense, conservation and recuperation of the marine-coast ecosystems to benefit local communities at the local and international level.

³⁸⁴ If you want to know more about the Project: www.redmanglar.org. Contact person: Marianeli Torres, Network coordinator / Verónica Yépez, Communication officer.

³⁸⁵ Torres, Marianeli. Interview in Quito. September, 2004.

In September 2003, the NGO *National Coordinator for the Defense of the Mangrove Forest* (from now I will use the Spanish acronym *C-CONDEM*), in Ecuador, became the Executive Secretary of the network for a period of two years. The network has the participation of several Latin American and international NGOs and many grassroots organizations. Some of these grassroots organizations, however, don't have direct participation within the network. They are represented by larger NGOs.

As an example of this, the Ecuadorian NGO *C-CONDEM* represents many grassroots organizations and communities (mainly situated in rural sectors) along the entire Ecuadorian coast. They participate in the network on behalf of these smaller organizations. The same case happens with many other Latin America NGOs participating in the network.

According to Marianeli Torres, coordinator of the *International Mangrove-Network*, although ICTs have not been a concern between members of the network, the use of ICTs occurs on two levels. First the network itself. She explains this:

“Although at the beginning of the network the encounters were off-line, the network has been fortified virtually. We have new partners, we discuss new proposals and there are a constant interchange of information and political support through the use of the Internet, e-mail and web-site”³⁸⁶.

Second, is the production of educative contents through multimedia CD-ROM, videos and Powerpoint presentations.

Torres:

“This is a long term project in which we wish to produce digital contents to be distributed between all the members of the network, principally to be exchanged with grassroots organizations that have less participation within the network”³⁸⁷.

³⁸⁶ Torres, Marianeli. Interview in Quito. September, 2004.

³⁸⁷ Ibid.

The *International Mangrove-Network* has created a web-site: www.redmanglar.org and a cyber-community through an electronic list in which not only the members of the *Network* can participate, but also people who are interested to be involved in it. The NGO *C-CONDEM* is also in charge of handling the information that circulates in the electronic list and the web-site.

b) Assumptions and goals

Assumption 1: Technology appropriation is subsumed under other main goals of the network.

According to Verónica Yépez, communication officer of the network:

“We haven’t been thinking concretely in technological appropriation, because our main work is the defense, conservation and recuperation of the marine-coast ecosystems in benefit of local communities, and technological appropriation has occurred by need”³⁸⁸.

Instead the network goals are:

- “To stop the expansion of unsuitable destructive and polluting industrial economic activities in coastal ecosystems.
- To recuperate the deforested areas of mangrove forests and coastal ecosystems, abandonment or occupied illegally by industries, in order to recuperate and give them to the local communities.
- To denounce and stop the attempts of legalization and the international financing of the aquaculture industry destructive, tourist industry, as well as the privatization of the coasts.
- To obtain of the states, governments and private enterprises the strict fulfillment of laws and other legal instruments in agreement with the international treaties that allows the conservation of the mangrove forest and coastal ecosystems.
- To foment as principle and strategy international solidarity with the support of the objectives of the *International Mangrove-Network*”³⁸⁹.

³⁸⁸ Ibid.

³⁸⁹ Institutional on-line document in www.redmanglar.org.

Assumption 2: ICTs come in through strategy and information-sharing.

Some goals in order to do this are:

- “To fortify the integral development of the local communities and their grassroots organizations and promote the interchange of knowledge and experiences.
- To divulge, promote and articulate the local efforts for the defense of the natural resources and local communities.
- To sensitize and teach about the values of the mangrove forest and coastal ecosystems at the local, national and international level”³⁹⁰.

Assumption 3: Grassroots can participate within the network.

These are encouraged to join the network however there are a number of limitations to their joining fully which I will describe below.

c) Limitations and solutions

Limitation: Lack of financing

Solution: International support

The *International Mangrove-Network* has the financing of the international NGO HIVOS³⁹¹ from Holland, which is supporting the *Network* until 2006 principally in its organizational fortification, however, there is a lack of financing within organizations that participate within the network.

Despite this financing, according to Yépez, resources are short:

“There is a lack of financial resources, principally, within grassroots organizations that can help them to improve their organizations and internal work ... NGOs that are representing grassroots organizations and communities need to find financial resources

³⁹⁰ Institutional on-line document in www.redmanglar.org.

³⁹¹ More information: <http://www.hivos.nl/>

to improve, as well, communication channels with them The C-CONDEM is helping grassroots organizations to implement ICTs in order to communicate with others"³⁹².

Limitation: Lack of infrastructure and connectivity

Solution: Centralized information

The *International Mangrove-Network* has created a web-site: www.redmanglar.org which is one of the mechanisms to consolidate many of the goals of the network. It offers general information about the network, bulletin board for news, alerts and updates. It has also incorporated discussions forums in which any person subscribes to the network can take part. As well, some of the research work and information, developed for the network members, are placed on this web-site through a monthly bulletin.

The network as well has an electronic list through which they disseminate and share information related with the concerns of the network – e.g. environment, marine-coastal ecosystems. Through this list, members and people in general can be informed and share information.

In spite of the development of these information and communication mechanisms, there is a lack of infrastructure and connectivity, principally within grassroots organizations, that prevent their participation in the "virtual" network to a great extent.

Yépez, communication officer of the network, describes these infrastructure difficulties:

"The office of the C-CONDEM in Quito, seat of the *International Mangrove-Network*, has no problems related with infrastructure and connectivity. Our companions of the local and regional grassroots organizations, however, are not able to be actively part of the virtual network, because they don't have electricity, telephone, computers or Internet. We have to meet with them regularly in order to maintain a dialogue ..."³⁹³.

This situation makes the participation between organizations unequal. In other words, grassroots organizations have to be represented by NGOs with which many of them have regular contact.

³⁹² Yépez, Verónica. Interview by e-mail. March, 2005.

³⁹³ Yépez, Verónica. Interview by e-mail. March, 2005.

The NGO *C-CONDEM*, which represents many grassroots organizations situated along the Ecuadorian coast, for example, carries out many face-to-face meetings with their grassroots in order to share information and concerns that later are placed within the network.

The network *doesn't* exist only "virtually". It is part of a broader network that uses other communication mechanisms – e.g. face-to-face meetings, workshops, seminars, fieldwork - principally with grassroots organizations. Although they can't participate actively through the virtual network many of their concerns are brought to the network by NGOs. Of course, to improve these ICT channels of participation to reach this end, however, it will be necessary to overcome infrastructure and connectivity problems, and many other limitations that grassroots communities and organizations confront.

Limitation: Lack of members' participation despite access

Solution: New forms of information organization

The next set of limitations are all related to how information is shared and organized. The solution is the same – a clarification and re-organisation of how information is shared.

As I referred to above, there is a lack of participation principally of grassroots organizations. Yépez describes the situation:

"Lack of infrastructure, connectivity, basic services and poverty are some of the reasons that mean that grassroots organizations can't participate actively within the network. These situations avoid an egalitarian participation between all the members and the majority of the interventions come from the NGOs members, but not from the grassroots"³⁹⁴.

Many NGOs, however, are not participating actively within the network although they have access to ICTs. There is a general lack of participation of certain groups. Yépez suggests this lack of participation leads to uneven information flows:

³⁹⁴ Ibid.

"All the members must contribute with information but it doesn't happen. The responsible member of the scientific group of the network should send more information related with different topics about the conservation but it is not happening. We receive information and collaboration of some of the members but it is not frequent ..."³⁹⁵.

The solution seems to lie in the need to set requirements on the information flows but the limitation may lie in the differences in how organizations perceive the goal of the networking itself as described in the next section.

Limitation: Messages outside the scope of the network

According to Yépez, all the information received from the members is re-sent without any filter, or censure. Not related information is, however, noted:

"Many times they send messages that are not related with our goals or thematic as network. I am in charge to alert the members of these mistakes"³⁹⁶.

As well, as she explains:

"... many times there is too much and dispersed information that circulate through e-mail. Then we need to find mechanisms to organize and link only the information that is interesting for our network"³⁹⁷.

Limitation: Lack of understanding of tools

Another ICT mechanism that the network is promoting for information and communication purposes is through discussion forums situated on its web-site. According to Yépez:

"We decided to work through virtual forums to be able to talk about single topics that concern our work. The first forum experience was very poor but it helps us to understand

³⁹⁵ Ibid.

³⁹⁶ Ibid.

³⁹⁷ Ibid.

how the tools function, because we didn't know from before how to use them ... we have organized a new virtual forum about the restoration of the mangrove forest. We want to improve the forums as a tool that helps us to link and organize the information related only with one topic ..."³⁹⁸.

Dolores González, responsible for the scientific research group, describes the forum as follows:

"It is a tool that contributes to a greater coverage of the educative campaigns of the network ... in this first forum the interest was the coastal-marine ecosystems. We had 46 people registered from different sectors: professionals of environmentalist NGOs, engineers, media people, students, aquacultures, among others"³⁹⁹.

Limitation: Lack of communication strategies

The network has developed some criteria about how to deal with communication in order to improve their work and social participation within society.

The network promotes concrete communicative actions through different levels and social actors: NGOs, grassroots organizations, and towards public opinion within societies locally and internationally.

One promoted strategy is focused on reinforcing activities that organization members of the network *have* developed before, such as: education, mobilization, campaigns, media presence, face-to-face meetings, international relations. This strategy also seeks to generate other resources such as CD-Rom, videos, radio programs, bulletins to reach society as a whole.

Through this strategy the network is able to be a legitimate interlocutor with a high level of citizen acceptance, which also allows them to make demands to governments. In a *Network* statement called: "Statement of Fortaleza", for example, they demand free trade agreements:

³⁹⁸ Ibid.

³⁹⁹ Report's Forum. February, 2005.

"We urge national governments to abstain from ratifying international free trade agreements promoted by the United States of America and the international finance institutions, along with their plans and associated mega-projects. Those plans and projects seriously threaten the sovereignty of our people, the livelihoods of the local communities and the natural environment"⁴⁰⁰.

Limitation: Upholding alliances

The network is looking to uphold previous alliances and consolidate new ones in order to find financial mechanisms and as well find support from other environmental NGOs on a global basis. Therefore, during October and November of 2004, the executive secretary in charge of the *Network*, held a series of meetings with different NGOs, civil society, universities, radio, and press in Holland, Sweden and Spain to talk about the *Network*, its objective and work.

In this travel, the *International Mangrove-Network* consolidated new alliances which were committed to collaborate openly with the network. According to Líder Góngora, executive secretary:

"All these new alliances which are collaborating with us through different mechanisms and perspectives allow us to continue working with our objectives and challenges in order to preserve and defend the environment ..."⁴⁰¹.

Limitation: Language

The web-site is mainly in Spanish. They offer as well some information in Portuguese and a little in English. Yépez argues that this is a problem they need to work on:

"Language is a limitation that we need to overcome because many our members are from Brazil and from different parts of the world ..."⁴⁰².

⁴⁰⁰ Statement of Fortaleza, August 30th – September 4th, 2004. Available at: www.redmanglar.org

⁴⁰¹ Góngora, Líder. Interview by e-mail. February, 2005.

⁴⁰² Ibid.

d) Conclusions

1. *Technology appropriation is subsumed under other main goals of the network.* Although the NGO people in charge of the *International Mangrove-Network* have stated that ICTs are not a primary concern there exists, a clear awareness about how ICT-appropriation can establish a new information and communication dynamic that supports the work of the network, not only locally, but also internationally.

The *International Mangrove-Network* has incorporated ICTs as important tools to carry out a networked dynamic of consultation, information exchange, solidarity action and active participation. Information dissemination and communication through ICTs between organizations, members and people in general are allowing the work of the network to be carried out.

The “virtual network”, however, has not been used by all the members of the *Network*, therefore, it also uses different non-virtual mechanisms to consolidate the work principally with grassroots organizations through campaigns, face-to-face meetings and workshops. This suggests that ICT-appropriation is not the only way to support the work of a network.

True ICT-appropriation, as this case raises, however, should lead to information flows also through a decentralized and a de-concentrated way, and facilitate collective processes of consultation, opinion making, consensus building, and decision making. Torres offers one example:

“In one of the e-mails one of the members asked how to get some information related with the reforestation of the mangrove forest, because his organization wanted to develop a project in this area. Thus, we sent some information related with this and we asked other members of the network to respond to this petition”⁴⁰³.

⁴⁰³ Torres, Marianeli. Interview in Quito. September, 2004.

The *International Mangrove-Network*, as a process of social organization, wants to give more importance to the democratic and participatory procedure of the organizations and members which can act and be part of other organization's concerns. In practice, it can be a bit difficult to carry out some actions – due to financial costs, infrastructure and connectivity issues.

The network, through this perspective, has ensured that organizations and people act and be part of democratic decisions through many processes of participation within national, regional and international scenarios, such as the promotion of several campaigns, solidarity mobilizations, and “statements” for governments, that inclusively, have pushed them to accept laws and concerns of grassroots people in relation to the marine-coast ecosystem.

2. *ICTs come in through strategy and information-sharing.* Networking and web-sites may lead to increased participation in the public sphere. Networking seems to enable them to see more clearly that their situation is not isolated, that problems are similar to those in other countries, and thus answers that they propose might be a source of inspiration to others.

Networks assure that local problems extend rapidly within the local level, generating actions locally in favor of a common cause, towards which they can act jointly increasing their participation within a public sphere. ICTs have led also to transcend quickly to global scenarios through the Internet and the creation of web-sites where other international organizations and members are also participating actively.

The *International Mangrove-Network*, for example, has led to increased participation through solidarity and local and international actions that have extended even to governmental levels. Torres explains this through an example in Guatemala, in a place called Champerico where shrimp industries closed the passage to fishermen. The network through e-mails and web-site campaign helped them to find a solution:

“The shrimp industry enclosed the mangrove, the beach and they didn’t allow fishermen to go fishing. They arrived at such a point that in the beach they put spines in order to prevent that fishermen passed ... thus, residents from Champerico wrote a denouncement telling us what was happening with fishermen and they asked for help through the network. Almost all the members of the network created solidarity actions and bulletins. They sent letters not only to organizations and public media in Guatemala, but all over the world, asking for solidarity in effort to help Champerico’s fishermen ... Due to these letters and the pressure of many worldwide organizations, the Guatemalan Government decided to act. It made a decree asking the shrimp industry to clear the fences and to reforest the mangrove forest that was cut by them”⁴⁰⁴.

This is one of the examples of how ICTs can lead to increased participation within public spheres. Networking constitutes, as León, Burch and Tamayo suggest, a new organizational paradigm which includes others who find themselves networking due to the realization of common objectives and interests. Networking obviously takes place without ICTs but has been supported and become more global with them under certain circumstances.

3. *Grassroots can participate within the network.*

A network can be seen as a social expression of participation where new stakeholders have joined through common objectives and – in some way - aim to influence social conscience. Stakeholders’ actions have been built around communication systems which refer, not only to “virtual” networks, but social networks with different communicative mechanisms – e.g. face-to-face meetings, campaigns, web-site, and electronic list. According to Castells, however, the logic of networking and the different uses of the Internet are leaving aside more and more old face-to-face mechanisms replacing them by computer mediated communication. This can be a danger when particular groups cannot participate directly in the information sharing due to lack of access.

⁴⁰⁴ Ibid.

The use of the Internet of the *International Mangrove-Network* work has been successful for certain groups. Interviews carried out for this study, however, have brought out the uneven levels of activity.

This situation, not only corroborates the argument that ICTs are insufficient forms of networking, but also brings a new issue of representation within networking, of who represents who, who are expressing the concerns of grassroots people and through what perspectives and intentions. In many cases, the representation issue seems to generate a complex dynamic of interests when NGOs say that they represent the grassroots with little knowledge about them. This situation has generated, according to Jorge Orduna⁴⁰⁵, controversies about the role of NGOs, mainly when it concerns also to international economic support.

9.4. *MANGLAR ICTS*. WORKING WITH GRASSROOTS ORGANIZATIONS

a) Background to the project

As I mentioned with regards to the previous project, grassroots organizations were generally not able to participate actively within the network because they can't follow some of the ICT strategies of the network. The majority of the Ecuadorian grassroots organizations don't have infrastructure, connectivity and enough economic resources to fortify their internal work. As well, people don't have enough technological skills that allow them to use ICTs.

On the basis of this, the *NGO C-CONDEM*⁴⁰⁶ (which is in charge of the *International Mangrove-Network*) represents many grassroots organizations along the Ecuadorian Coast. The NGO has decided to develop a parallel project with some grassroots organizations in order to fortify their internal organizational management and to find mechanisms of information and communication that allow them to learn ICTs, share local experiences with a more broader audience, and to participate more actively with the network.

⁴⁰⁵ Orduna, Jorge. *O.N.G. Las Mentiras de la Ayuda*. Sur Editores. Quito. 2005.

⁴⁰⁶ More information: www.ccondem.org.ec

In order to do that, the NGO has initiated a pilot project called *Manglar ICTs*. This pioneer project, which aims to reach several grassroots organizations, has begun to be developed, in this first stage, only with the participation of two grassroots organizations from the Esmeraldas province: the *Fondo Ecuatoriano Populorum Progressio* (FEPP in Spanish) situated in Limones and the *Foundation of Ecological Defense* (FUNDECOL in Spanish) situated in Muisne.

Andrea Ávila, communication officer of *Manglar ICTs*, explains the project:

“With the NGO *Foundation of Ecological Defense*, we are going to systematize all the successful experiences with the reforestation of the mangrove forest and also to develop an ecotourism project. With the *Fondo Ecuatoriano Populorum Progressio*, we are going to systematize all the experiences acquired with the project ‘Manglares’ which has been running in Limones for 3 years, a project related with the seed of shells and blue and red crabs”⁴⁰⁷.

The project began in June 2004 with the financial support of the International NGO *Institution for Communication and Development* from Holland (IICD⁴⁰⁸). It has begun to develop a series of workshops with coordinators and promoters about ICTs, communication processes, and narrative in order to be able to create communicational products.

According to Ávila, one of the advantages of the project is to work with people from the same communities who have been working for many years within these grassroots organizations dealing with community problems and needs:

“The coordinators and promoters of the project know all the social and cultural background and factors that are necessary to consider in order to create communicative products. In effect, besides technical things, they can find narrative strategies for videos or ICTs in general that might work for communities”⁴⁰⁹.

⁴⁰⁷ Ávila, Andrea. Interview in Quito. October, 2004.

⁴⁰⁸ More information: www.iicd.org

⁴⁰⁹ Ibid.

b) Assumptions and goals

Assumption 1: ICTs help to systematize local communitarian experiences to be shared with other organizations.

The *Manglar ICTs* is based, according to Ávila, on the assumption that:

“There is a need to systematize local experiences of grassroots organizations in order to be documented and shared locally and internationally”⁴¹⁰.

Assumption 2: Offering some ICT knowledge to people from grassroots organizations can improve their work with communities.

Ávila explains this in part:

“We want, through the support of ICTs, to give back information to the communities ... to find how the process developed, what are the achievements and failures, and following this we are going to create communicative products for other organizations in other provinces or countries that could imitate some of these achievements through similar projects”⁴¹¹.

c) Limitations and solutions

Limitation: Lack of infrastructure and connectivity

Solution: The provision of basic infrastructure

The *C-CONDEM* headquarters, located in Quito are well equipped with the latest generation technology and Internet connection. They are creating a web-site in order to offer information about the NGO.

⁴¹⁰ Ávila, Andrea. Interview in Quito. October, 2004.

⁴¹¹ Ibid.

According to Ávila, however, most of the grassroots organizations, which are part of the C-CONDEM, are situated in poor rural communities and they can't incorporate ICTs within their organizations. This makes the communication with them and between them difficult as described previously.

Manglar ICTs, as a first goal, will then provide the organizations that are working with the project, with at least basic infrastructure: computers, printers, scanners, software, photographic and video cameras.

Limitation: Lack of technological skills

Solution: Training of local people locally

The first activity of the project is that coordinators and promoters from grassroots organizations take workshops and digital training because none of them have technological skills to use ICTs. As the *C-CONDEM* headquarters are situated in Quito, people from the grassroots organizations have to travel to Quito in order to be part of these workshops. Some of them have acquired some previous knowledge about computers, but the majority of them don't know anything about them.

Ávila explains:

"Promoters, coordinators of the two grassroots organizations and some people from the *C-CONDEM* also are going to be the first to receive the training in Informatics, use of video cameras, editing, graphic design, and narrative, in order that they can acquire technological skills to use later with other organizations and communities in the development of the project"⁴¹².

Limitation: Lack of specific strategies of how to carry out the project with local communities

Solution: Greater dialogue

⁴¹² Ávila, Andrea. Interview in Quito. October, 2004.

Although the project is just beginning, there is a lack of specific strategies for how grassroots organizations are going to develop their ICT goals within communities of local people. The first grassroots organization *FEPP* has a broad goal to systematize all the experiences acquired with the project called "Manglares", as described above, which has been running in Limones for 3 years (a project related with the seed of shells and blue and red crabs).

The second grassroots organization *FUNDECOL* also has a general goal to systematize all the successful experiences with the reforestation of the mangrove forest and also to develop an ecotourism project.

Although they have, apparently, specific ideas of what they are interested to systematize and what information they want to share, according to Ávila, there is no concrete strategy of how they are going to carry this out within communities. From my observations, there seems to be a need for greater dialogue with local communities in order to clarify the "hows" and "whys" this type of project can or should be carried out within and for communities.

Limitation: Finding ways to motivate people

Solution: Using local cultural expressions

People from one of the grassroots organizations has suggested that it will be interesting to create some videos as a way to systematize some the experiences of local communities with the reforestation of the mangrove forest⁴¹³. According to Marcelo Cotera, one of the coordinators of the project in Muisne, however, the work of creating videos with people is not easy, because they need to consider community ideas and perspectives. He explains:

"We are thinking to do some videos together with the consensus of the communities to talk about the destruction of mangrove forest and how they have being defended and reforested ... we want to tell about this situation through a video to young generations who can be aware about the problem, but I find difficult deciding how we are going to do

⁴¹³ Grassroots organization called FUNDECOL situated in Muisne, Esmeraldas province. November, 2004.

it with them, how to motivate them in a way that they can express their concerns ... it needs to have a meaning for them ..."⁴¹⁴.

Juan Zambrano, a promoter for FUNDECOL, suggests using local culture:

"Marimba music and dance is a way in which people feel motivation ... then, they sing 'coplas' with stories related with the situation of the mangrove, and it can be a way which they can represent their vision and experience of the reforestation of the mangrove forest ... we are thinking to film this"⁴¹⁵.

d) Conclusions

1. *ICTs help to systematize local communitarian experiences to be shared with other organizations.* Through the use of ICTs it is possible to generate a new communication process where communities can be involved through a double objective. First, to learn the strategic use of ICTs. Second, to be able to create some communication products that systematize local experiences in order to be shared. This is the case of this project which, through the creation of some communication products, has as a goal to get grassroots people to tell and share stories about their experiences with marine-coastal ecosystems which again will be shared with other local and international organizations.

According to Castells, organizations can be built around communication systems like the Internet and other media. Media that allow them to share objectives, influencing – in some way - the social conscience, converting itself to actors of change. As the argument goes, social participation, mainly based on information exchange, has meant that the Internet and other new media may be converted into an essential means for expression and organization, not only locally but also internationally⁴¹⁶.

⁴¹⁴ Cotera, Marcelo. Interview in Muisne. November, 2004.

⁴¹⁵ Zambrano, Juan. Interview in Muisne. November, 2004.

⁴¹⁶ Castells, Manuel. *The Internet Galaxy: Reflections on the Internet, Business, and Society*. Oxford University Press. UK. 2001. p: 137.

Along these lines the *Manglar ICT* project aims to reach broader audiences in order to exert some change within grassroots organizations through experiencing other local experiences and moreover to share it with organizations in other parts of the world.

2. *Offering some ICT knowledge to people from grassroots organizations can improve their work with communities.* Offering ICT knowledge to people from grassroots organizations can improve their work with communities. This assumption is related with the previous one. However, and although it can be a way to do it, it requires to think locally about the concerns of local people and how they are going to feel motivated to be part as well of this ICT-appropriation.

This project aims that local people can be involved, at least partially, within the creation of ICT products. It is difficult to judge how ICTs can improve the work of grassroots organizations with people from the communities, but perhaps it is more easy to assume that they can be involved within an ICT process of appropriation when they have clear idea of how this appropriation is going to be useful also for them.

My point is that NGOs need to be able to define, discussing with grassroots communities, what are their interests and needs in order to develop a project. A previous dialogue perhaps can promote and build strategies in many motivational ways for local people instead of only to bring them a project which they might not feel motivated to ensure its success. The general lack of participation of grassroots organizations and local communities attests to the relative success of the project so far.

In the next section, I will present the case of the national network *Infodesarrollo.ec* which has two proposed objectives. First, to share information, knowledge, methodologies and learned lessons about the use of ICTs. Second, to influence public policies in the use of ICTs in different sectors of Ecuadorian society.

9.5. INFODESARROLLO. EC NETWORK⁴¹⁷



a) Background to the project

On February 2004, with the support of the national NGO *Intercom-EcuaneX* and the international NGO *Institute for Communication and Development (IICD)*, a workshop was held for the creation of the “network of the exchange of information and knowledge about ICT for the development”⁴¹⁸. The main objective of this

encounter was also the creation of a network.

This event summoned institutions and organizations of the government, private sector, civil society and international organizations that work with ICTs. The workshop included, also, the participation of organizations that work directly with the international NGO IICD on ICT projects.

This workshop attempted to define the needs and possibilities of each one of the assistant organizations in relation to two proposed objectives of the network. First, to share information, knowledge, methodologies and learned lessons about the use of ICTs. Second, to influence public policies in the use of ICTs in different sectors of Ecuadorian society.

Infodesarrollo.ec, thus, was conformed as the *Ecuadorian Network of Information and Communication* with a focus on areas related with ICTs following these two main objectives. The network was created by several non-governmental and governmental Ecuadorian and International organizations which work with ICT matters in different sectors. The network has also a specific working group for the coordination of approximately 10 organizations.

This network has also a National Program (NP) which includes a series of ICT projects that have been carried out in different areas by the international NGO *IICD*: agriculture, environment,

⁴¹⁷ If you want to know more about the project, see: www.infodesarrollo.ec Contact person: Diana Andrade, Communication officer.

⁴¹⁸ Andrade, Diana. Interview in Quito. October, 2004.

governance and education. The network goal in relation to the National Program is to link and support all these projects in order that they won't be developed isolated, but linked to local and national processes. The National Program also supports an axis of training for the process of consolidation of these projects. The training is also supported by the international NGO IICD.

Infodesarrollo.ec has designed a web-site: www.infodesarrollo.ec which offers information about the network, news about ICTs, events, a few articles, information about ICT legislation and links to all the web-sites of the members of the network.

The web-site, as well, puts out a bulletin every three months called *Connection* that mainly describes ICTs projects and initiatives in Ecuador, and news of how they are being carried out. This web-site has been developed with "free software" which is one of the concerns of this network, the advocacy of free source for ICT development.

Some of the other activities that the network wish to realize are: Research and publications, radio and video productions, electronic forums, workshops and seminars.

b) Assumptions and goals

Assumption 1: Grouping different social sectors will help to promote ICTs within Ecuadorian society and influence ICT public policies.

According to Diana Andrade, communication officer of the network, combining efforts has greater impact supposedly also at the State level:

"The possibility to create a network with different social sectors, not only allows a permanent exchange of experiences, but as well, through agreements and dialogue, we can create some consensus that has influence at the State level in order to create public policies in relation to ICT dissemination throughout Ecuadorian society"⁴¹⁹.

Assumption 2: A network can deal with several ICT issues.

⁴¹⁹ Andrade, Diana. Interview in Quito. October, 2004.

A further goal of the *Infodesarrollo.ec Network* is to find mechanisms to share information, knowledge, methodologies, and learned lessons about ICT-appropriation and uses between organizations. The assumption is that through this method the network can solve numerous ICT issues. This may require, however, some forms of consensus of what ICTs are and can do.

c) Limitations and solutions

Limitation: Lack of coordination between organizations

On February 2004, the network began to find working strategies. According to Andrade, however, it has been difficult to carry out a proposal that involves several organizations with many different perspectives:

“Working between different NGOs and sectors is not easy. It takes a lot of time and dialogue to arrive at a consensus ... I think individual interests need to be left aside, we need to think about common objectives where all the organizations can participate in order to get some benefit for the population”⁴²⁰.

Despite the difficulty, according to Andrade, there was much optimism:

“The first meeting was really enthusiastic, all the members of organizations that were participating found that it was necessary to create a network in which all of the interested parties working with ICTs can work together”⁴²¹.

They decided to have regular meetings and develop some strategies to make the network work. One of those strategies was that organizations assume specific work according to their field. For example, the *Latin America Social Science Faculty* (FLACSO in Spanish) and the *Ecuadorian Corporation of E-Commerce* (CORPECE in Spanish) that are doing research about ICTs, government and telecentres will contribute with the result of their research. *Nueva Red*, *APC* and

⁴²⁰ Ibid.

⁴²¹ Ibid.

IICD will further develop and carry out a series of workshops and conferences related with ICT topics, such as: connectivity, public policies, cost of the Internet, and open source.

Limitation: Little carry-through

Members of the network are trying to develop some strategies in order to work together, but it continues being difficult to work with many organizations with different perspectives and interests. One of the mechanisms that the network proposed was the creation of a web-site in order to disseminate and exchange information.

This web-site, however, is very poorly developed and it is failing to reach the objectives agreed by the network. The web-site doesn't have updated information, it offers little interesting ICT information, and it does not include news of ICT activities that can keep members of the network and people in general well informed.

The only positive thing about this web-site is that it offers some links to the web-sites of the other organizations which are part of the network. Many of *these* web-sites offer important information on different ICT topics, activities and general information about their organizations.

Limitation: A network born through the interest of an international NGO

One of the reasons this network was created, it seems, was because the international NGO *Institute for Communication and Development* (IICD), which axis of work is to develop ICT projects for developing countries, wanted to establish a network between the organizations that are going to develop ICT projects under its financial and technical support.

This situation, although it can be positive, requires that other organizations, not just the ones that are local partners of the international NGO, can take part in the network with a recognition of their needs, concerns and common objectives in relation to ICT issues.

If the creation of a national network on ICTs focused on local aspects it would be a good opportunity to generate positive changes, ideas and moreover policies within the Ecuadorian

society. There seems to be, however, a need to consolidate a real network where national civil society actors, and not only organizations involved with ICT projects directed by an international NGO, can participate in full.

d) Conclusions

1. *Grouping different social sectors will help to promote ICTs within Ecuadorian society and influence ICT public policies.* Andrade explains, in part, the basis for this assumption:

“One of the main difficulties is that government, the private sector, and civil society work completely separated. Thus, you can see that there are some isolated positive ICT initiatives that diminish their impact with the population to whom it directed this initiative. The private sector works on its own initiatives, the government works on its own initiatives, both are almost the same, and they are mistaken in the same thing ... if they will have the capacity to share their experiences, not only that they could work together, but also to correct their mistakes ... it will be possible to develop more ICT initiatives or to improve them”⁴²².

The *Infodesarrollo.ec Network* aims thus to group different national and international organizations of different sectors: government, private sector and civil society in order to promote ICT matters within the Ecuadorian society and influence in ICT public policies.

As Castells argues, however,

“networks in society are arising through an extremely complex social and communicational infrastructure and relations, where many of the individuals and organizations can't follow the logic of the network because as any other social structure, this is not absent of contradictions, social conflicts and challenges as any another form of alternative social organization”⁴²³.

⁴²² Andrade, Diana. Communication Officer. Interview in Quito. October, 2004.

⁴²³ Castells, Manuel. *The Information Age: Economy, Society and Culture. Volumen 3: End of Millenium*. BlackWell Publishers Inc. UK. 1998. p. 350.

On the basis of this last argument, the assumption of dynamic networking becomes more complex when all these organizations represent different interests and perspectives within society. Government interests differ almost completely from civil society interests and perspectives which makes it more difficult to establish a common dialogue between them, even though they have decided to work together within a network. This is mainly because many governmental institutions which are in charge of developing public ICT policies, in recent years, have not been able to develop any of them (as discussed in Chapters 5 and 6). Civil society has been pushing them to take some decisions in order to develop concrete and practical policies to improve ICT dissemination and appropriation.

In order to establish a working network, it will be necessary to create a better communicational environment that can engage these sectors to talk about ICT matters, finding alternative and specific strategies to develop ICT within society, and to coordinate the work between organizations. It requires the creation of permanent interactive spaces of information and communication on the use of ICTs or face-to-face mechanisms.

As Castells also points out, although a network is an open structure, able to expand without limits, there is a need to keep members communicated, as long they share the same common objectives and interests. He adds that in order to propose collective actions aiming at the transformation of values and institutions of society, which seems to be the case of the *Infodesarrollo.ec Network*, participants need assuring to express their dissatisfaction through a participative and organized way⁴²⁴.

2. *A network can deal with several ICT issues.* This may also be true, if its members are able to discuss and create strategies that allow them, although working in a decentralized way and within their own sector and area, to be able to find common consensus about which ICT issues need to be addressed with priority.

⁴²⁴ Castells, Manuel. The Internet Galaxy: Reflections on the Internet, Business, and Society. Oxford University Press. UK. 2001. p: 250.

Andrade suggests that working together between various social sectors with different points of view is extremely complicated due, as well, to incorrect ideas about ICTs in general. According to her, the most common idea is to look at them within a techno-determinist position through which many of these organizations have been working, reproducing these ideas through their work and projects. Andrade describes this perspective and its results:

“Some of their visions in relation to technology are totally wrong. Many of these organizations believe that technology infrastructure is enough ... I think, it is necessary to change this techno-centric vision within the organizations, because they are those who represent ICTs within society ... if they have only a techno-vision, they are going to reproduce the same ideas”⁴²⁵.

9.6. CONCLUSIONS – CIVIL SOCIETY

9.6.1. Practical

NGOs and other organizations and representatives from Ecuadorian civil society have often viewed ICT dissemination and appropriation as an essential means for expression and organization and the possibility to participate in a more democratic way within Ecuadorian society. ICTs thus acquire a broader meaning than the simple instrumental character of the technology, in the way that they are becoming social tools that promote social changes having repercussion not only within local scenarios, but also on international ones. Building on this, in this section, I sum up some practical conclusions looking at the case studies of this chapter.

- ICTs, as the *International Mangrove-Network* showed, may contribute to information and communication strategies in order to consolidate the united work of several NGOs, grassroots organizations and people in general that share some common interests and objectives. Some of these ICT strategies have been the design of a web-site, the creation of an electronic list (e-mail), on-line forums and bulletins, and communicational products.

⁴²⁵ Andrade, Diana. Interview in Quito. October, 2004.

- The *International Mangrove-Network*, however, also showed that ICT-appropriation by the NGOs, as tools that allow better information and communication channels, are insufficient to consolidate a social network that includes grassroots people, who don't have access to technology, skills, or connectivity. Thus this network has developed other mechanisms of communication in order to incorporate grassroots within the network work – e.g. face-to-face meetings, live campaigns, workshops, seminars, and representation in the network by others. This is an experience that may be extended to other similar projects.

- This network, as well, has shown that ICTs can be tools that support social and political action that reinforce not only its work within organizations, with the network, but also actively promoting changes that have extended to the public sphere.

- Although using ICTs as communication tools can allow the equitable distribution of knowledge and the full exercise of citizenship that can strengthen civil society organizations and involve them in developing and defending social policies, as the case studies have showed, there is broader consideration to overcome in order to reach this. Referring to the *Manglar ICT* project, which aims to carry out an ICT project with grassroots organizations, it has been necessary not only to provide them with equipment, but also to train them in their use, and to teach them about how these tools can be useful for them within their organizations and with communities. It is a long process of appropriation which implies that this equal distribution of knowledge through ICT-appropriation will take time and in many cases does not succeed in communities with people that can't follow the dynamic of ICTs, or see their value in their daily lives.

- It will be important to incorporate the language of ICTs into grassroots organizations, as part of a meaningful change in conventional uses. As Pérez and Vilela suggest:

“... one of the factors for success in building new methods to use the Internet depends on how it will incorporate local cultures and how it will respond to local needs, using it

strategically in accordance with principles that allow as well an horizontal and equitable exchange of knowledge”⁴²⁶.

It will be important within the *Manglar ICTs* project to develop clear objectives with local communities and cultures in order to respond, as Pérez and Vilela suggest, to local needs.

- Considering that national NGOs through international cooperation get financial support for many grassroots projects, it is of vital importance that both national and international NGOs aim to reach broader objectives with their “social” projects that include ICTs. This suggests, in my opinion, that it is necessary to establish a better dialogue with communities in order to determine their real needs and concerns. Many projects, according to Torres, have arrived to Ecuadorian communities without considering their needs sufficiently, and of course this represents, many times, a loss of resources and few improvements for communities who lose trust in “good intentions”.
- ICTs offer great potential for the expression of citizen rights and for the communication of human values. *The International Mangrove-Network* is demonstrating through its work that it is possible, with the help of ICTs, to express citizen rights within public local scenarios and extend them to international audiences. Members of the network are been able to participate in a more democratic way, having the possibility to discuss public decisions with governments, and pushing them to take some decisions in relation to environmental issues. The Internet, within this dynamic, is playing a fundamental role for this network.

Castells argues also for this role for the Internet:

“by relatively leveling the ground of symbolic manipulation, and by broadening the sources of communication, it does contribute to democratization. The Internet brings people into contact in a public agora, to voice their concerns and share

⁴²⁶ Pérez, Paula and Vilela, Adriana. In: Bonilla, Marcelo and Cliche, Gilles (Eds). *Internet and Society in Latin America and the Caribbean*. FLACSO/International Development Research Center. Ecuador. 2004. p: 9.

their hopes. This is why people's control of this public agora is perhaps the most fundamental political issue raised by the development of the Internet"⁴²⁷.

- A network is a social process which implies that organizations work together through some common objectives. It requires a series of strategies that consolidate their ideas, promoting them within society. *The Infodesarrollo.ec Network* has showed that working together with different social sectors that have so different perspectives is not only a complex dynamic of relationships, but it requires a coordinated work where organizations and members can discuss and acquire knowledge leaving aside their interests, in order to reach broader objectives as a network and for society.

9.6.2. Theoretical

- **The importance of civil society participation:**

As discussed at the start of this chapter, the rise of civil society organizations, cultural institutions, semi-public agencies and a variety of local pressure and social movements and interest groups - e.g. ethnic representatives, environmentalists, feminists, religious and indigenous groups - have caused a new social dynamic within Ecuador. These groups are new actors in the political and social affairs.

As the case studies have showed, different types of civil society organizations are building networks to promote some common objectives and concerns that can allow them, not only to work together in these common concerns, but to act together and participate in a democratic way. Referring to the case of the *International Mangrove-Network*, its work is strengthening not only the internal work of organizations and individuals, but it opens up to greater participation within the public sphere as well, taking on more social and political affairs, and recognition and support.

In relation to civil society Chandoke argues for two important features:

⁴²⁷ Castells, Manuel . *The Internet Galaxy: Reflections on the Internet, Business, and Society*. Oxford University Press. UK. 2001. p: 164-5.

“Society can be conceived of as the entirety of social practices in a polity. Civil society can be seen as that part of society where people, as rights-bearing citizens, meet to discuss and enter into dialogue about the polity. It is in this sense that civil society is absolutely indispensable for democracy, in its promise of an engaged citizenry”⁴²⁸.

Through this idea, Chandhoke argues further that:

“the failure of political parties, and the crisis of representation it creates, does not result in the disappearance of the activity we call politics. Instead, political practices look for other channels”⁴²⁹.

Social movement networks have found that ICTs can be such important alternative channels of communication and participation that are allowing them to discuss many issues and ensure criticism and evaluation of the established power, political decisions and to promote actions of change. In the case of the *International Mangrove-Network* their combined efforts did slow the environmental deterioration and major ecological damage caused in coastal communities. The use of ICTs have improved their participation within broader international spheres, where their political actions have extended to other audiences, and also have led to national and local governments assuming positions and developing laws and policies against environmental deterioration.

The most important change that networks are generating is the possibility to have more active participation within public scenarios where many of these networks are been able to make changes. ICTs, undoubtedly, are being assumed as important tools that legitimatise and support actions within the public sphere, even though “digital barriers” make their appropriation difficult, mainly for rural people.

- **ICT offers new channels of information and communication:**

⁴²⁸ Chandhoke, Neera. Article: [What the Hell is “Civil Society”?](http://www.opendemocracy.net/debates/article-3-122-2375.jsp) 17-03-2005. Available at: <http://www.opendemocracy.net/debates/article-3-122-2375.jsp> p: 5.

⁴²⁹ *Ibid.* p: 6.

Referring to the case studies, ICTs, principally the Internet, are important tools that are opening new channels for information and communication between local and international organizations. Castells, as mentioned previously, has argued that many of the old mechanisms within networks have been replaced by computer mediated communication, where people are not tied to the same particular time, place and other physical conditions. This study has found that only partly true and only under certain circumstances.

Van Dijk adds to this that ICTs could serve two functions. Firstly, they may supply more and better information to organizations and citizens. Secondly, the interactivity of the ICTs might create a representative network that can transcend to public spheres. The case of the *International Mangrove-Network* exemplified this. In one way, they have been able, through the creation of some ICT mechanisms, to supply more and better information to organizations and civil society. Second ICTs allowed them to have a permanent contact where they can be aware of different concerns of organizations and people. Of course, the case also showed up the lack of participation of grassroots organizations, but its “virtual network” is still contributing to direct their work and environmental goals locally and internationally.

León, Burch and Tamayo argue for a more complex view and argue that ICTs need to be seen in a broader sense by organizations and participants, not only as channels of information and communication, but as sources and sites that can produce meaning and knowledge. They suggest that the role for many participants is often passive:

“ ... project ‘participants’ subordinate themselves and ICTs to a passive role to retrieve and disseminate information from existing sources, rather than projecting a more active role of constructing content for the purpose of build a community or resisting powerful agencies”⁴³⁰.

The *Manglar ICT* project aims to exchange the passive role of participants in their use of ICTs for a more active role by creating communicative products with grassroots organizations. This situation gives to ICTs some “aggregate values”, in the sense that they are not anymore only means to acquire information and knowledge, but also tools through which it is possible to create

⁴³⁰ León, Osvaldo; Burch, Sally and Tamayo, Eduardo (2001). Op. cit. p: 55.

communicative products based on cultural aspects including language, design and local knowledge. Of course, this implies, as the *Manglar ICT* project showed, the need to train, teach and motivate people not only to get technological expertise, but also about environmental concerns, design and narrative that can allow them to build their own content in order to be shared.

- **Digital divide within networking:**

According to León, Burch and Tamayo, even though political considerations with serious implications are at stake, its treatment has basically been imposed as a technical matter expand connectivity in order to close or at least reduce the “digital divide”:

“However, the matter of connectivity, as important as it may be, is only one element of the issue. So we must ask ourselves why it is overemphasized. The reason is the supremacy of a vision of development that emphasizes international (especially economic) insertion rather than social concerns”⁴³¹.

Castells also argues that “the digital divide” remains a problem even with the creation of networks:

“Internet is the technological tool and organizational form that distributes information power, knowledge generation, and networking capacity in all realms of activity. Thus, developing countries are caught in a tangled web. On the one hand, being disconnected, or superficially connected, to the Internet is tantamount to marginalization in the global, networked system ... but it can also be a recipe for crisis and marginalization ... This is not the consequence of the Internet *per se*, but of the digital divide”⁴³².

Castells explains that this is:

“... the divide created between those individuals, firms, institutions, regions, and societies that have the material and cultural conditions to operate in the digital world, and those

⁴³¹ Ibid. p: 54.

⁴³² Castells, Manuel (2001). Op. cit. p: 270.

who cannot, or cannot adapt to the speed of change. Under such conditions, the networking logic of the Internet-based global system scans the planet for opportunities, and links up what it needs for its programmed goals-and only what it needs"⁴³³.

Networking through the use of ICTs, looking at the case studies, is also affected by the dynamic of who possesses ICTs and who does not, which refers to the "digital divide", following and as a consequence of other types of economic, social, political divides and barriers within Ecuador. Although networking, as Castells suggests, seems to be a way to overcome digital divides, it is still impossible to assume that this may be so within a context of Ecuador, as the case studies show, with the impossibility of grassroots communities situated in rural zones to be part of these networking in a fully participatory way. This is particularly the case when virtual networking replaces older face-to-face mechanisms and therefore a shift in the public sphere to sites they cannot access.

In my opinion, the logic of networking in *many* cases of the Ecuadorian reality through ICTs continue being an "utopia" unless training and democratic ICT policies are put in place.

- **ICT will let grassroots communities leapfrog to higher levels of development:**

León, Burch and Tamayo reiterate the need to look at particular contexts:

"Several studies have identified the elements needed to create the right 'enabling environment' or 'e-Readiness' for a country or community to take advantage of ICTs for the promotion of its development, both in terms of technological implementation and with regard to the appropriation and systematization of information and knowledge. Several coincide in pointing out that there is no pre-established recipe to ensure a successful application of ICTs in development strategies"⁴³⁴.

In spite of this open horizon, León, Burch and Tamayo argue that the central aim has not changed - topics that strengthen current international power structures prevail, one of whose key elements is technology control:

⁴³³ Ibid.

⁴³⁴ León, Osvaldo; Burch, Sally and Tamayo, Eduardo (2001). Op. cit. p: 57.

“That is why, aside from all the rhetoric, there has not been the slightest change in the criterion that understand technological transfers toward southern countries as a mere transfer of products, but not of knowledge that would make it possible for technology to be produced and developed autonomously and in accordance with the specific needs of those countries”⁴³⁵.

Referring to the case studies, the possibility that ICTs will let grassroots communities leapfrog to higher levels of development, not only seems to be impossible, but it is a rhetoric that blinds and makes us believe in an instant technological solution that overlooks the basic problems these communities face. In the case of the *International Mangrove-Network* not only can't grassroots participate within the “virtual network” because they don't possess ICTs, but there are many other concerns that make it not possible to assume such idea. Rural and poor communities are in a subordinate position due to poverty and lack of basic resources. This reality prevents the idea that ICTs will bring easy development.

The project *Manglar ICTs*, on the other hand, has lower aims not that grassroots people reach a major development in their communities and lives through ICT-appropriation, but at least that they can get basic knowledge that allows them to share their experiences with other people, in order to enrich their work and raise their concerns.

This brings me to the end of the case studies. In the following chapter I attempt to bring together the issues across the various fields of study - e-Government, e-Learning and Virtual Networking.

⁴³⁵ Ibid. p: 59.

CHAPTER TEN

CONCLUSIONS

10.1. INTRODUCTION

Ecuador has been dealing with a serious economic, political and social crisis during the last 10 years. Many believe that the successive governments have sold out the country to foreign economic and political interests, principally the United States. Ecuador was the first Latin American country to change its currency to US dollars. It has accepted military United States bases in its territory. All its economic and social reforms have been based in neo-liberal ideologies pushed by international pressure of the World Bank and the International Monetary Fund. Corrupt, inefficient and authoritarian governments have governed its territory. Ecological disasters through uncontrolled exploitation are ravaging the environment.

This chaotic situation has brought major social problems, poverty, insecurity, violence, unemployment, migration and continuous social upheavals to the country. Ecuadorian governments weakened during these last years cannot assure anymore the well-being of citizens, who in turn don't trust anymore in the good intentions of new governments and reforms. Under these circumstances, Ecuadorian inhabitants are looking for some mechanisms and proposals to improve not only their lives but also Ecuadorian society in general. ICT-adoption has been seen as one such mechanism.

My research has also shown that ICT-dissemination, despite the current economic crises, is taking place in Ecuador through different mechanisms, under a variety of assumptions and with several and varied goals by social sectors within government, education and organizations from civil society. These sectors, although they have been incorporating ICTs within a broader perspective where they want to assure change and reform in order to overcome crisis, often, however, continue emphasizing several insufficient ideas about how to appropriate and use technology, under what perspectives and with which implications.

Technological determinism, uncritical ICT dissemination, short term objectives, lack of public policies and a lack of financial resources to ensure sustainability are some of the limitations

preventing not only the incorporation of ICTs but also their goals of improving the Ecuadorian society.

In this chapter, I bring together the three areas of this study: government, education and civil society in order to pull out some of the practical and theoretical implications that need to be considered.

10.2. PRACTICAL IMPLICATIONS

- Within the three areas of study: government, education and civil society organizations perspectives are often limited to the adoption and implementation of technology in terms of access, infrastructure, and connectivity. There are, however, several internal and external considerations – e.g. political, social, cultural, linguistic - that are essential to look at in order to promote ICT-appropriation with an aim to bring about broader change within these three areas.
- The goal of ICT-appropriation rather than simple dissemination requires looking at all the elements and people involved in the process of dissemination and use. The idea behind this is that technologies don't change anything for themselves. It is people in their own local context who are going to make changes. The case of the e-Government *SRI Tax Office* pointed to the need to look at not only technological implementations and changes, but also all the elements and people involved within the internal public management of this government institution. It has required a consideration also of their internal specificities and concrete problematics.

This case also showed that some external elements were necessary to consider in order to improve the services for citizens. This situation raised new concerns in relation to citizens, considering what they require and need in order to develop some concrete mechanisms that allow this governmental institution to offer better services. On the basis of this, they have improved the institution through the development of a web-site that offers tributary information, some on-line services, but also, considering citizens´

requirements (and their general lack of access) they have continued offering face-to-face services.

In the e-Learning cases of formal education I pointed out also that some of the main actors of change within schools and colleges were teachers who introduce ICTs to the learning and teaching processes within their classes. Here also there was not a simple implementation of technology and learning packages. The most successful programs involved teachers actively adapting the technological for their use. This situation brought into account the need to develop a continuous digital training with teachers in order to improve their technological skills as well as their pedagogical methods using ICTs, but also listening to their needs and considering their specific linguistic and social context.

- ICT-appropriation requires knowledge, ideas and a specific ICT working group – principally in the case of governments - in order to carry out successful projects. Many of the limitations, as the case studies showed, are related with this. There is a general lack of competent people, leadership and coordination preventing the development of ICT projects.

In the case of the *National Agenda for Connectivity* which was the e-Government's unsuccessful national program, the main reason it could not succeed was the lack of competent people working with ICT matters. It also was related with a lack of political continuity, interest and decision making.

The study of *Infodesarrollo.ec Network*, as well, which main objective is to join several social sectors that work with ICT matters in order to discuss and find possible ways of ICT-appropriation within the Ecuadorian society, showed up a lack of understanding and knowledge of how to develop concrete strategies that allow these organizations to carry out the work between organizations within the network.

- The study of programs for e-Government, e-Learning and Networking, considered as processes of change which can open new channels for democratic participation, where citizens, students, and people from the grassroots can establish a dialogue between

themselves and with government in a more open public sphere gave mixed results. In certain cases it has been possible to, if not transcend to public spheres, at least establish a more democratic and open dialogue within civil society.

The *SRI Tax Office*, the successful e-Government project, has been able to develop a clear and quicker public management through the creation of an information and communication internal network, and external web-site that offers some on-line services and tributary information. This has improved the services for citizens who now can be able to have greater insight at least into decisions regarding their taxes. It has at least led to greater transparency.

In the *International Mangrove-Network* case some increased participation in public spheres has taken place supporting social and political actions. This case, however, has also raised the issue of representation. Although the network is supposedly made up of NGOs and grassroots organizations, the main participation within its "virtual network" is by NGOs, mainly because grassroots organizations situated in rural poor communities don't have any technological infrastructure, access, or skills to use technology. Although technology may improve information and communication channels, it is necessary to carry out other types of communication with communities in order to maintain their representative work and concerns within the network.

- e-Government, e-Learning and Networking requires a series of policies related with ICTs which need to be developed by the government. Some of the limitations discussed in the case studies were related with the lack of national policies that can assure ICT dissemination and appropriation within favorable conditions, even though the general context is not favorable. ICT national policies – e.g. telecommunications policies in relation to the costs of services - could give benefit principally to marginalized sectors that are at the moment almost totally excluded from any ICT initiative.

Need for the development of national policies has been considered mostly by civil society organizations which are pushing governments to take decisions. This remains impossible when political and economic crisis are higher up on the political agenda. It will be

important for governments to establish a dialogue with other social sectors from civil society and the private sector which are at the moment demonstrating more experience with ICT-appropriation.

There are ICT policies, as well, developed by other Latin American countries that can be important to look at within the Ecuadorian context. In Brazil, for example, the ex-president Fernando Henrique Cardoso decided as State policy:

“to eliminate the paper in the dispatch of law’s projects and the decree’s texts between him and his ministers. Since now, it is going to happen through Internet and documents that will have electronics’ signatures of the public officials. This program, baptized as e-government, aims to reduce the heavy bureaucratic procedures between the different areas of the government, particularly between ministers”⁴³⁶.

To what extent these initiatives as successful and for what reasons would make important contrasts for further study.

- Every ICT project must develop concrete strategies of how they are going to carry out the project in practical terms. Many of case studies have showed that although ICTs are not the main considerations for them because they are simply tools that reinforce their work, in practice the same cases have demonstrated that it is difficult to assume or use technology without thinking about how it is going to be appropriated, under what mechanisms and for what purposes.

In the case of the *Amazonian Telecentres* (which main objectives have been to create an ICT “space” for communities in order to teach them how to use technology and to allow them to find a way to communicate), there remains a lack of concrete strategies of how they are going to reach their broader objectives through the use of ICTs, such as improving the lives of people of these poor communities. Technology under this situation

⁴³⁶ Cardoso, Fernando Henrique (actual president of Brazil). Journal of Democracy. Article: [Democracy as a Starting Point](http://muse.jhu.edu/journals/journal_of_democracy/toc/jod12.1.html). National Endowment for Democracy and the Johns Hopkins University Press. January 2001. Available at: http://muse.jhu.edu/journals/journal_of_democracy/toc/jod12.1.html

may not give broad positive effects in relation to the needs of people as they confront other serious social and economic problems that will need to be attended to first before developing strategies that allow the incorporation of ICTs.

In other cases strategies have been carefully developed, such as in the *Edufuturo* program where a series of concrete projects have been incorporated within public schools. They have carried out the program through a series of interrelated mechanisms: Technological implementation, workshops for teaching and training in the use and application of ICTs for school teachers and directors, the development of educative and cultural on-line content through the design of a web-site, the development of some educative software multimedia for all the grades of the school, connectivity to the Internet for all the schools involved in the program.

Although the implementation of these concrete projects have allowed ICTs to be incorporated within many of the public schools, there are a series of other limitations preventing such appropriation. Thus, if ICT should aim at a positive social effect in relation to the users, it will be necessary as well to follow the developments of the project carefully in order to improve it for the benefit of the end users, in this case students.

- Constant evaluations of ICT projects need to be carried out in order to recognize lacks, limitations and mistakes that are preventing the development of the projects. As the *Edufuturo* and *CICJ* programs showed, for example, the lack of serious analysis means that not only are their outcomes under question, but it is also preventing them improve future work. External and internal, clear and regular evaluation of their projects can improve their work with end users.
- ICTs may change educative spaces, reinforce learned knowledge, and allow the acquisition of new knowledge. As the *Edufuturo* program showed, many public schools have been able to change learning spaces using computers, software, interactive games, and a few of them through the Internet. Teachers, in these new spaces, are using technological tools in order to reinforce learned knowledge in their classes. In order to do

that, however, it has been necessary that teachers acquire certain skills of how to create a dynamic space between students and technology.

This situation tells us that in order to incorporate ICTs within any space, people must develop a range of skills only to learn how to use computers and software, but to learn how these tools are going to be useful within their work, class, governmental institutions or organizations and how to adapt them.

- Training will be a continuous and important requirement in order to develop ICT projects. This requires looking at the specific necessities of training for different social sectors, with special attention to minority and marginalized groups, assuring their participation in the definition of contents and methods.
- The use of Internet technologies offers opportunities to marginalized people even when they don't have a computer or Internet in their houses. People go to cyber-café, telecentres and infocentros. The costs of these telecentres are in most cases prohibitive, and a variety of strategies to pass this barrier need to be considered.

The *Virtual College* (the on-line program for secondary school) has allowed that many marginalized people that can't complete their secondary studies, have the possibility to do it through a web-based program. Sustainability remains an issue here as does the need for alliances.

- ICTs need investment and financing as all the case studies have required. Some of the ways to get resources has been through private sectors and international cooperation, which have supported principally ICT infrastructure. However, it is evident that private sectors are not going to invest in non-profitable projects, even though they can be well developed. International cooperation, in this context, has played a central role, particularly on initial investments and starting costs. Despite this, it is not only important to get infrastructure, but to define a way to sustain the entire project in an integral way.

This includes not just financial resources but also social, political, cultural and technological sustainability.

- Some of the case studies have showed that people feel motivation to use ICTs when they find meaning in them for their daily lives. In the case of the *CICJ Young Center*, technology has been a “hook” that has allowed the teaching of broader social issues that have made young people feel motivation about the *Center*, the technology and its use. All the extra educative activities at the center in turn have made that young people consider technology not only as anymore a simple technological tool, but a social tool that young people may use to share their concerns with other people and within other spaces – e.g. colleges, districts, different parts of the city. This participation has meant, as well, that they establish an important dialogue within public spheres with other citizens in order to revalue their situation as young citizens with valid proposals and ideas to improve their city.

Young people, as well, have been able to have a critical position in relation to the information that they are getting through the Internet.

- Some of the case studies have pointed out the need to consider broader social and cultural issues where cultural and linguistic diversity must be encouraged in order to ensure cultural development of communities and people. In the case of the *Amazonian Telecentres* this would happen if “kichwas” communities appropriate technology incorporating linguistic and cultural diversity. This case pointed out the need to have relevant local content in local languages which may motivate many of them to use ICTs, and also to encourage cultural development through the preservation of their own language.

The generation of local contents and products incorporating cultural, historical and local knowledge of the people change the meaning of technology when users are more active and creative participants and no longer only receptors.

- The case studies have also suggested that it is important to find means of sustainability to maintain a project in a long term. Many of the ICT projects in general have been unsuccessful principally for this reason. This implies, however, not only financial resources in order to maintain projects, but at the same time to have the capacity to develop new revised in collaboration with users and communities.

With regards to the *Manglar ICTs*, it has been possible to carry out this project due to the economic support of the international cooperation. This doesn't mean that this project is going to succeed only for economic reasons, even though it is an important support that allows the initial start of the project. In the end it may only succeed if they are able to define concrete strategies of how they are going ensure community grassroots participation, which implies establishing a better dialogue with them.

Some of the e-Learning cases have shown other mechanisms of sustainability when schools and colleges can't afford to cover all the expenses because their budget is too low. It has been necessary to ask parents to cover some extra expenses. This sustainability mechanism, however, is difficult to apply in many cases because parents with low incomes can't afford to pay all the extra expenses for their children.

Another initiative in some of the schools has been community support of infrastructure through "mingas" (communitarian work), where parents help to paint, fix and maintain physical spaces of schools. Although, it is unthinkable that this may be a long-term solution, as the government has the duty to support schools, within the Ecuadorian reality, all alternative solutions need to be considered in order to improve education.

- ICTs, as information and communication tools, are allowing to some extent a better distribution of information and a better participation of civil society. Organizations and people are able to discuss and share many concerns with other people and organizations. However, as the case studies have showed, there are many other considerations to look at in order to reach these goals, such as: social and cultural issues, connectivity costs, local organization and strategies, sustainability, and basic services, to mention a few.

The study of the *Manglar ICTs* project and the *International Mangrove-Network* has shown that, it has been necessary not only to provide communities with equipment, but also to train them in their use, teaching them about how these tools can be useful for them within their work with organizations, with communities and within public spaces. It is a long process of appropriation in order to strengthen their participation as citizens within public and democratic spheres. ICT-appropriation will take time and in many cases, as these cases show, it is almost impossible to include poor communities within this appropriation, not only because they are situated in rural areas with no conditions to implement ICT, but also because technology is secondary for them when they have broader needs in order to survive.

Thus, although ICT-appropriation can allow a better distribution of information and a better participation of NGOs and people, it continues being unequal for many people.

- Considering that national NGOs who, through international cooperation get financial support for many grassroots projects, it is of vital importance that both national and international NGOs aim to reach broader objectives through their projects. In my opinion, it is necessary to establish a better dialogue with communities in order to determine their real needs and concerns. Many projects have arrived to Ecuadorian communities without prior consultation.

Thus, ICTs have to be analyzed carefully, in order to define where, what and how ICTs can contribute to communities' needs and demands in an integral manner.

- ICTs offer large potential for the expression of citizen rights, for the communication of human values and freedom of expression. *The International Mangrove-Network* is demonstrating through its work that it has been possible, with the help of ICTs, to express citizen rights within local public scenarios and extend them to international audiences. Members of the network are been able to participate in a more democratic way, having the possibility to discuss issues with governments, pushing them to take

some decisions in relation to environmental issues. The Internet, within this dynamic, is playing a fundamental role for this network.

Within the *CICJ* project, young people have been able to participate in some decisions, which at the same time have guaranteed their citizen rights and freedom of expression, as they have been able to express their own opinions as young citizens through different ways of ICT-appropriation – e.g. through different community actions, college workshops, expositions, web-sites and radio programs.

- A network is a social process which implies that organizations work together through some common objectives and interests. A networking process requires a series of strategies that consolidate their ideas, promoting them within organizations, civil society and governments.

The Infodesarrollo.ec Network has shown that where different social sectors have different perspectives. A coordinated and organized work is required in a network.

- Within government, education and civil society there is a need to decide what type of technology would be best to implement for the purposes of the project in an area. In Ecuador, for example, software license costs are high.
- One general implication refers to the importance of creating alliances that allow the combination of resources and strengths between governments, private sector and civil society in order to carry out an ICT project. These alliances, however, need to be based on ethical principles to build capacities and ensure local communities' involvement in all phases of a project.
- Another general implication refers to the need to establish a body, within government, for national coordination in order to elaborate and fortify national plans for the development of ICTs for Ecuadorian society. This requires as well the participation of other social sectors in order to develop and design concrete strategies. It raises also the need that each country has to define its own paths of ICT-appropriation based on its unique social,

economic, political and cultural context, which also implies to see them within broader objectives in order to assign them a new role within social concerns.

10.3. THEORETICAL IMPLICATIONS

1. Shift of thinking from ICT techno-economic perspectives to social approaches.

In Chapter Two, I discussed some general perspectives that have been used to analyze the “information society”.

In Latin America, which has had another logic of appropriation of ICTs, dominant discourses on ICTs were based in the beginning on “foreign” concerns which in turn emphasized techno-economic perspectives. Many “e-Readiness” studies appeared in relation to ICTs.

However, in the 1990s, with the advent of the Internet, new ICT-specific research has emerged with commonalities to the socio-cultural intellectual ideas of the 80s. To a greater extent in this research, the possibilities to re-appropriate, re-design and take advantage of ICTs arose looking particularly at the Latin American context.

Techno-economic perspectives are not sufficient anymore to understand and analyze ICTs within the Latin American context as economic, social and political crises have resulted in a lack of broader social perspectives amongst the priorities of governments. Lack of social policy has in turn led to an increase in poverty and violence. Within this context various organizations and social actors have redefined their role and the processes of social organization. These are sectors that are being affected not only by the adverse structural factors (migration, unemployment, poverty) but also by a political management leading to marginalisation as well as:

“direct repression ... the discredit of their demands, the loss of their fighting space, the negation to recognize its condition of social interlocutors ...”⁴³⁷.

⁴³⁷ León, Osvaldo; Burch, Sally; and Tamayo Eduardo. *Social Movements on the Net*. Agencia Latinoamericana de Información (ALAI). Quito. September, 2001. p: 97.

Various sectors of society, principally civil society organizations, are seeking specific demands to end the crisis. This is the case of social movements with the indigenous populations of Ecuador and Bolivia, protagonists in the past few years, the ecological movement, the feminist movement and human rights organizations.

This reconstituted "social tissue" are relating with each other and starting to act with local initiatives. Informative exchange and the creation of communicational tissues, networks, and interaction spaces have been fundamental for the coordinated work of these new actors.

According to Pimienta and Barnola these are important also because they transcend national borders:

"some networks of different civil society organizations have been playing an important role in the region, not only because they were the first connectivity nodes in different countries of Latin America, but because they have developed a different approach and different strategic models for the construction of national and regional networks in order to be part of the 'information society'"⁴³⁸.

These new social networks strengthened by the appearance of ICTs find in them a means of expression. They in turn are influencing the technological use adapting and redesigning them toward their needs and interests looking, principally, at broader social objectives. Some of the ideas behind this new perspective have been the questioning of the very premises of dominant patterns.

Under this new situation, social organizations and new networks have been re-evaluating the role of technologies:

"They stand out as a counterweight, in as much as their entry on this new scene is marked by participatory criteria, which is part and parcel of the democratizing role they play. And to this extent they empower individual and organizational abilities to speak out,

⁴³⁸ Pimienta, Daniel and Barnola Luis. En la Búsqueda Colectiva de un Impacto Social Positivo a la Internet Latinoamericana. Comunidad Virtual MISTICA. 2001.

form alliances, negotiate, or resist, in order to coordinate legitimate social appropriation of such technologies"⁴³⁹.

Social organizations have considered the importance of taking ownership of such resources, particularly the Internet, which means not only being users, but also deepening their understanding of the logic behind them, in order to benefit fully from them. On the basis of this, they promote trends in other directions that concern social aspects principally:

"... it is also becoming evident that they have a role to play in defining people's interests with regard to the orientation of ICT development and deployment, which would imply not only influencing the respective decision-making bodies, but even re-conceptualizing the dominant discourse and taking on the task of challenging meaning, values and social aspects"⁴⁴⁰.

2. A social approach: Digital barriers.

As noted above, much Latin America ICT early research and studies were based on e-Readiness models, following principally techno-economic dominant perspectives. However, the shift of thinking, coming from the ICT practices and the socio-economic, political and cultural realities of Latin American countries, pointed out the need to look at broader social issues.

"ICT social approaches, developed in Latin America, look at the conditions and influencing factors in relation with the barriers and limitations for ICT-appropriation within countries"⁴⁴¹.

The expansion of ICT and the distinct socioeconomic disparities in Latin America create and deepen the so-called "digital barrier". Awareness of a "digital barrier" also leads equivalent to the search for specific mechanisms to overcome them through the more adequate use of ICT. This implies the inclusion and participation of new social groups in new ICT initiatives, and looking as

⁴³⁹ Ibid. p: 8, 9.

⁴⁴⁰ Ibid. p: 9.

⁴⁴¹ Ibid.

well for mechanisms of united work with different groups of the civil society, the State and the private sector, as described in previous sections.

Context requires extending a social approach, to overcome hegemony and techno-mercantile ideas and replace them with a vision where the central axis is human beings, their rights and their fundamental necessities. Social research perspectives on ICTs situates technologies and infrastructure as sources for human development, but not as ends unto themselves. "Digital barriers", within this perspective, must be understood as an expression and result of broader social barriers. Thus, it is necessary to look at them considering these broader limitations: political, social, educative, genre and economic which are the principal causes of marginalisation.

ICT-appropriation and the so-called "information society" is limited, as Bonilla and Cliche argue by other factors and "in the use of the technology spatially extending itself in an unequal way"⁴⁴².

Following this argument, and taking my case studies as example, larger social problems such as poverty, social and economic inequality, undernourishment and illiteracy are affecting the Ecuadorian sectors not only in the possibility of being connected and having access to technologies, but also in the relevance of using and gaining benefit from them. Different forms of ICT-appropriation are taking place within Ecuador, which raises the need to understand how people are trying to convert ICTs as real social means of change.

In other words, an ICT study situates us under new theoretical considerations where ICTs are not simply tools to be analyzed, but are situated by people within broader contexts and goals of social change. This requires a broader understanding of political, social and cultural aspects of government, education and civil society. It raises new concerns changing political situations, social development, and citizen participation, to mention a few.

3. Networks and the importance of civil society participation.

The rise of civil society organizations, cultural institutions, semi-public agencies and all kinds of social movements local pressure and interest groups - e.g. ethnic representatives,

⁴⁴² Bonilla, Marcelo and Cliche, Gilles (Eds). Internet and Society in Latin America and the Caribbean. FLACSO/International Development Research Center. Ecuador. 2004. p: 4.

environmentalists, feminists, religious, social movements, indigenous - have generated a new social networking dynamic within Latin America.

As the case studies have shown, different types of civil society organizations are building networks to promote some common objectives and concerns that can allow them, not only to work together in these common concerns, but to act together participating in a more democratic way – e.g. the case of the *International Mangrove-Network*.

Networks have found that ICTs can be important alternative channels of communication and participation that allow them to discuss many issues and ensure criticism and evaluation of the established powers, political decisions and to promote actions of change.

On the basis of this, civil society, which is creating and grouping the most diverse assortment of networks, has established within the Latin America and the Ecuadorian society, in my opinion, a social perspective that refers to the need to find alternative solutions in order to meet political, environmental and social crises. According to León, Burch and Tamayo, one of the most important changes that networks are generating is the possibility to have a more active participation within public scenarios where many of these networks are been able to make changes.

ICTs, undoubtedly, are being assumed as important tools that legitimate and support actions within public sphere. Pimienta and Barnola explain that the construction of national and regional networks by civil society through NGOs have allowed the development of some ICT approaches:

“Some networks of different civil society organizations (APC, FUNREDES) have been playing an important role in the region, not only because they were the first connectivity nodes in different countries of the region, but because they have developed some ICT approaches and different strategic models in order to be part of the information society”⁴⁴³.

⁴⁴³ Pimienta, Daniel and Barnola Luis. Op. cit. p: 10.

Civil society approaches have shown up some of the difficulties to carry out the dissemination of ICTs in the region. Through the studies of these, it has been possible to determinate some considerations and necessities of poorer countries in order to be part of the "information society".

10.4. WAYS FORWARD

Carrying out this study, I realized that there remains a lack of concrete studies and research preventing a broader understanding of ICT-appropriation and how ICTs can be appropriated to achieve broader social results. This situation concerns, not only Ecuador, many other Latin American countries where little specific research about ICTs has been carried out, even though they are developing some interesting ICT initiatives.

This lack of research and studies prevent, as well, the possibility to compare some of the "successful" ICT concrete practical strategies and mechanisms carried out by other Latin American countries.

It is important, therefore, to look at some ways forward:

a) The need to look at other sectors in Ecuador

In this study, I have studied three sectors: government, education and civil society through NGOs. There is a need, however, to look at other sectors in Ecuador, such as: private, health, agriculture, commerce, tourism, and higher-education, to mention a few. The main reason for this is that ICT appropriation is such a new and unknown area, Ecuadorian society will require a better understanding of opportunities, challenges and obstacles and their implications within a socio-organizational framework, if they are to optimize their use of these resources for their own aims and aspirations.

This study has revealed that even though there is an interest in being able to appropriate and use ICTs, there are several limitations preventing such appropriation. These limitations are not only related with precarious infrastructure and high-costs of connectivity, but also with a lack of training, language, knowledge, policies and sustainability.

On the basis of this, there is a need that different sectors that work with ICTs establish a permanent dialogue of how and why ICT practices may contribute to generate changes and development, which will allow, as well, that a new number of people assume that a pending challenge is to develop ICT policies and strategies, as a condition to be able to take advantage of ICT within their different sectors. Governments need to be involve actively in this dialogue in order to be able to develop public policies that help to disseminate ICTs.

b) The need to look at comparisons to other media

As I mention above, the Latin American region has been incorporating ICTs in a “subordinate position”, however, these unequal ways in which ICT have been taking place, has brought into consideration for many Latin American governments the need, not only to reject all kind of hegemonic positions in relation to ICTs, but as well, to design some mechanisms and strategies that can make ICT-dissemination and appropriation more equal within the region.

One way forward then is to look more closely at other media dissemination and appropriation and policies related to it. This includes the creation of a Latin American TV station to meet the “invasion” of transnational media companies in the region. This new TV station signal is called: “Televisora del Sur” (Television from the south).

This TV station was created by Venezuela, Argentina, Cuba and Uruguay. Its signal was installed by Venezuela on the NNS satellite, allowing it to reach America, Western Europe and Northern Africa. The TV station will assign 40% of its programming to news, while the rest will be dedicated to daily regional news analysis, as well as Latin American non-Hollywood productions and documentaries, including the region's history and music.

Andrés Izarra, Venezuelan Minister of Communications and chairman of the new station, argues that:

“... it is hoped that ‘Televisora del Sur’ will open new doors for Latin America independent producers, news, and protagonists kept in the background by the large transnational media, as well as become the subcontinent’s new face in news casting”⁴⁴⁴.

Aram Aharonian, Uruguayan journalist also argues that:

“Our goals are to be able to show Latin America with its own eyes, and help in the medium term to democratize the television of the region. This is the first television project contra hegemonic to the mass level in America and we hope to have soon 5, 10, 20 TV independent Latin American channels more”⁴⁴⁵.

Another example is that governments are supporting community radios, such as the case of Uruguay. Rodolfo Nin Novoa, Uruguayan vice-president argues in relation to community radios:

“We must encourage as much diversity as possible in broadcasting. As well as supporting free competition of voices and proposals, and in that frame, we will impel the recognition of community media, enabling available specter so that these experiences are protected and promoted like it is done in so many other parts of the world in the development and construction of peace, as a space for the exercise of average freedom of expression and as a medium for greater participation, hence providing greater control of public management”⁴⁴⁶.

The Uruguayan government has confirmed the decision to recognize radio in the national legislation.

“The Relatoria has requested the American states to adapt our regulatory framework so that we recognize these media, and as administrators of the radio waves ... we assign them according to democratic criteria that will guarantee an equality of opportunities – for all individuals - to access them”⁴⁴⁷.

⁴⁴⁴ Izarra, Andrés. In Villachica, Marilu. Article: Telesur on air: the new voice of our america. Ourmedia. April, 2005.

⁴⁴⁵ Aharonian, Aram. Article: El canal Telesur es una alternativa al mensaje hegemónico del norte. El Comercio Newspaper. Quito – Ecuador. June, 2005.

⁴⁴⁶ Nin Novoa, Rodolfo. In article: Uruguay: strong government support to community radios. AMARC-ALC. May, 2005.

⁴⁴⁷ Ibid.

This initiative by the Uruguayan government has been supported by a great number of social organizations: human rights, the Association of Uruguayan press, unions of journalist, etc.

These examples show how Latin American countries are developing some clear strategies in order to validate their countries, not only under a “subordinate position” but as promoter or changes taking advantages of ICTs.

c) The need to look at ICT comparisons within Latin America

There is also a need to compare the situation within the region not only in order to find similar referents and outcomes, but also to be able to discuss ICT issues that can lead to a Latin American understanding within broader international scenarios. In my opinion this will be useful in order to find more equal levels of implementation and appropriation for Latin American countries including issues of web-censorship, open source and licensing.

For example is that the Brazilian government has promoted a new initiative with president Luiz Inácio “Lula” da Silva to replace all the Microsoft informatics programs with free alternative software, such as Linux. According to José Luiz de Cerqueira César, Head of the State Bank of Brazil:

“the proposal is centered in the nations developing because they do not have the assortment of patents and the capital to invest as the developed nations have. The free computer programs help to reduce the barrier between developed and emergent countries”⁴⁴⁸.

The campaign to promote the use of open source software in Brazil is part of Lula’s government plan to reduce government expenses and, separately, to contribute to create a local industry of computer programs. According to José Dirceu, director of Lula’s cabinet, they are going to create a national decree that is going to demand the use of open source:

⁴⁴⁸ de Cerqueira César, José Luiz. In article: [Lula Sigue su Pelea con Microsoft y Difundirá Linux Fuera de Brasil](http://lac.derechos.apc.org/cnoticias.shtml?x=33054). APC. April, 2005. Available at: <http://lac.derechos.apc.org/cnoticias.shtml?x=33054>

"The objective of this decree is to change the way in which things are functioning, so that now the open source will be the current software. The patented software could be used only in exceptional circumstances"⁴⁴⁹.

One of the Brazilian officials suggests that the total expenses of the Brazilian Federal Government in information technology is more than 1000 million dollars annually, and almost 10% goes to pay software licenses. "The government saved 28.5 million of reales since it began to use the open source system Linux and Open office.org ..."⁴⁵⁰.

As González-Manet argues ICTs in Latin America began in an imbalanced way which has not been righted:

"ICTs, in the region, usually present serious contradictions. They came to the continent approximately 20 years ago. They were associated to the bank transactions and airlines and not as elements of infrastructure transformation in the industrial production, basic services and social areas ... There are still few national policies of communication and information available to balance this deficit ..."⁴⁵¹.

According to him, one of the challenges that Latin America confronts to incorporate ICTs, is not only related with the transfer of technologies or the industrial commercial strategies, but the development of coherent regional public policies that help them to discuss ICT issues within international scenarios:

"These policies not only must stimulate the national and regional independent production, but also they need to consider the politic, cultural and educative phenomenon to preserve identity and sovereignty of Latin America in relation to hegemonic powers"⁴⁵².

There are some important scenarios and agreements where ICT matters are being discussed in which Latin American countries are also participating. This situation shows up the need to

⁴⁴⁹ Dirceu, José. In article: Lula Sigue su Pelea con Microsoft y Difundirá Linux Fuera de Brasil. APC. April, 2005. Available at: <http://lac.derechos.apc.org/cnoticias.shtml?x=33054>

⁴⁵⁰ Ibid.

⁴⁵¹ González-Manet, Enrique. Paper: Nuevas Formas de Comunicación y Cultura: ¿Cómo Enfrentar las Nuevas Tecnologías?. Telos number 38. 1994. Available at: http://www.quadernsdigitals.net/index.php?accionMenu=hemeroteca.VisualizaArticuloIU.visualiza&articulo_id=6267.

⁴⁵² Ibid.

develop a broader studies and approaches between Latin American countries in order to be able to confront ICT issues within these scenarios of power and decisions with more criteria of analysis. It is time to move beyond and expand concepts of e-Readiness.

APPENDIX 1

I find important to mention some e-Readiness examples of what kind of analyses and methodologies have been developed because many of them have been assumed ICTs predominately within a technological determinism in which the technology itself is assumed to be a major and isolatable variable which causes social change and progress. This way of thinking has been the frame of many studies and e-Readiness models developed predominately in North America, Western Europe and Eastern Asia and they have been the starting point as well of Latin America ICT studies.

During recent years, however, different approaches and discourses have begun to emerge in Latin America. Many governments, civil society organizations and private sectors have incorporated ICTs into their activities and consequently, they have begun to develop studies, networks and meetings to discuss issues and concerns regarding ICTs and the new "information society", not only following "foreign" models, but also looking at the difficulties, needs and contexts to carry out ICTs initiatives

Latin America NGOs and networks that work with ICTs, which have appeared due to the need to take advantage and to understand how ICT generates changes and under what conditions, have been able to develop their own approaches and methodologies looking at the specific context of Latin America countries.

This appendix, therefore, is divided in three parts. **Part A** presents some of the e-Readiness examples of what kind of analyses and methodologies have been developed from the perspective of developed countries. **Part B** focuses on some Latin America examples, some of them have taken as references some of the e-Readiness models described in Part A. **Part C** presents some examples of international and Latin America NGOs and networks that work with ICTs.

PART A

This section presents some of the e-Readiness examples of what kind of analyses and methodologies have been developed from the perspective of developed countries, I note the following proposals as examples:

- **Readiness Guide - Center for International Development at Harvard University.**

Available at: <http://www.readinessguide.org>

This guide examines 19 categories of indicators within five groups: Network Access, Networked Learning, Networked Society, Networked Economy, and Network Policy. The guide involves an attempt at establishing the situation of the country, area and social group, and evaluating the availability and use of ICTs. The evaluation is carried out by a group of experts who, within the frame of questions of a form, determine different levels of preparation (e-Readiness) in relation with an ideal type of e-ready society.

- **Knowledge Assessment Methodology (KAM) 2004 – Program Knowledge for Development (K4D). World Bank Institute (WBI).**

More information: <http://www.worldbank.org/wbi>

Available at: <http://info.worldbank.org/etools/kam2004/>

The program K4D:

“helps developing countries make more effective use of knowledge for their overall economic and social development. The K4D program provides knowledge assessment and policy development services, capacity building and skills enhancement services”⁴⁵³.

The K4D program uses a Knowledge Assessment Methodology (KAM) which consists of a set of 76 structural and qualitative variables that are organized in four pillars, one of these being the incorporation and creation of new technology to articulate strategies for their transition to a knowledge economy (KE).

⁴⁵³ <http://info.worldbank.org/etools/kam2004/>

- **Readiness Guide 1998 - Computer Systems Policy Project (CSPP)** (some of the members are: Compaq, Intel, Sun, Dell, among others).

More information: <http://www.cspp.org/>

Available at: <http://www.cspp.org/projects/readiness/>

“This self-assessment tool is designed to help you and your community determine how prepared you are to participate in the Networked World. It facilitates the first step of understanding where you are and provides a vision of where you need to be to reap the benefits of being connected in a Networked World”⁴⁵⁴.

This guide provides a series of 23 questions that will help to determine your community's level of e-Readiness for Global Electronic Commerce. They are grouped in five groups: infrastructure; access; applications and services; economy and enablers. The evaluation shows a score that indicates the community's readiness allowed them to take actions that will supposedly enable communities, governments, business, schools, community groups, and citizens, to benefit from being “as connected as possible”.

- **Index of Technological Advance (ITA). Human Development Report 2001. United Nations.**

More information: <http://hdr.undp.org/reports/global/2001/en/default.cfm>

Available at: <http://www.undp.org/hdr2001/spanish/tecindi.pdf>

This index measures the participation of a country in the creation and use of the technology, considering four dimensions: 1. creation of the technology; 2. diffusion of recent innovations; 3. diffusion of old inventions; and 4. specialized knowledge.

- **E-Commerce Readiness Assessment 2000- Asian Pacific Economic Cooperation (APEC).**

More information: <http://www.apecsec.org.sg/>

The main goal of this assessment is:

⁴⁵⁴ <http://www.cspp.org/projects/readiness/>

"to help governments develop their own focused policies, adapted to their specific environment, for the healthy development of e-commerce"⁴⁵⁵.

This methodology analyses six categories for readiness for e-commerce: basic infrastructure and technology; access to network services; use of the Internet; promotion and facilitation; skills and human resources; and positioning for the digital economy.

- **Methodology INEXSK - Universidad de Sussex – Science Policy Research Unit (SPRU). Cited by: Mansell, Robin and Wehn, Uta⁴⁵⁶.**

INEXSK (Infrastructure, Experience, Skills and Knowledge) is a measurement technique of indicators, which is used to map the strengths and weaknesses of those developing countries for which data are available and to compare the 'footprints' of selected countries.

The Brazilian "Green Book" considered this method to monitor indicators related with aspects of the Information Society in Brazil. (http://diamante.socinfo.org.br/livro_verde/ingles/anexo_2.htm)

- **Program eEurope 2005 - European Union.**

More information: http://europa.eu.int/information_society/eeurope/2005/index_en.htm

Available at:

http://europa.eu.int/information_society/eeurope/2002/news_library/documents/eeurope2005/eeurope2005_en.pdf

eEurope 2005, called *An information society for all* is an:

"action plan proved to be a successful format and the basis for similar actions not only in the candidate countries (eEurope+), but also in third countries. Its method of 1) speeding up the adoption of new legal measures, 2) re-focusing existing support programmes, and 3) defining clear targets to be achieved, combined with benchmarking, had a major

⁴⁵⁵ http://www.bridges.org/ereadiness/tools.html#_Toc509205361

⁴⁵⁶ Mansell, Robin and Wehn, Uta (Eds.) *Knowledge Societies: Information Technology for Sustainable Development*. Chapter 2: The INEXSK methodology. United Nations - Oxford University Press. UK. 1998.

impact. The new action plan will build on these successes and maintain eEurope as the symbol of European Union policy to develop the information society"⁴⁵⁷.

The action plan is structured around four fields which are interlinked: a) policy measures; b) good practices; c) benchmarking; and d) an overall co-ordination of existing policies. These four lines will be explored in: a) modern online public services (e-government, e-learning services, e-health services); b) a dynamic e-business environment -and, as an enabler for these-; c) widespread availability of broadband access at competitive prices; and d) a secure information infrastructure.

- **Information Society Index (ISI) 2002 - International Data Consulting / World Times.**

More information: www.IDC.com

Available at: <http://www.idc.com/getdoc.jhtml?containerId=28401>

"The Information Society Index (ISI) reflects the big picture of global technology adoption, usage, and readiness. Despite the downturn of 2001, which had major repercussions throughout the industry, nations in the developed, mainly Western, world remain far ahead of emerging markets in terms of the ability of businesses, consumers, and governments to adopt, deploy, develop, and utilize technology and information. Although emerging markets, such as China and India, exhibit strong growth of investment in IT infrastructure, these markets will remain fundamentally inhibited in the short term by their social infrastructures, reflected in their positions within the Information Society Index"⁴⁵⁸.

- **Working Party on Indicators for the Information Society (WPIIS) 1999 – Organization for Economic Co-operation and Development (OCDE).**

Available at: http://www.idgl.lu/library/pdf-files/define-measure_ecomm-oct99.pdf

This WPIIS:

"underlined the importance of social as well as economic indicators in an e-commerce measurement framework. Important social indicators relevant to e-commerce range from skills and education, to patterns of interaction in the marketplace, the household and the

⁴⁵⁷ http://europa.eu.int/information_society/eeurope/2002/news_library/documents/eeurope2005/eeurope2005_en.pdf

⁴⁵⁸ <http://www.idc.com/getdoc.jhtml?containerId=28401>

workplace. Especially in the interventions from industry and from market research firms, it was clear that there is a need to link economic indicators to social indicators⁴⁵⁹.

This methodology is presenting as flexible, not only including: E-commerce readiness (issues of preparing the technical, commercial and social infrastructures); E-commerce intensity (issues relate to the state of e-commerce application); and E-commerce impact (issues relate to additionally and multiplier effects); also they include other categories such as: measures of the information economy; diffusion of ICTs; impacts of the ICTs; etc.

- **ICT Indicators in the countries part of the CAIBI 1999- Conferencia de Autoridades Iberoamericanas de Informática (CAIBI).**

Available only on Spanish: <http://www.caibi.org/indicadores/proyecto.htm#1>

The member countries of the CAIBI have based their proposal on statistics and indicators of four areas: Internet, Informatics Market, Telecommunication, and National Counts. Also, the indicators proposals to measure these four areas are based on statistics about: macroeconomic and social aspects; ICTs markets; computational infrastructure and Internet connectivity; telecommunication infrastructure; and e-commerce.

- **Nordic Information Society Statistics 2002 – Nordic Council & Council of Ministers.**

More information:

http://www.norden.org/pub/uddannelse/forskning_hojereudd/sk/itstatistik2002.asp?lang=6

Available at: http://www.norden.org/pub/uddannelse/forskning_hojereudd/sk/Julkaisu_final.pdf

“There is a growing demand for official and internationally harmonized statistics on the information society and its growing influence on different aspects of our society. As a consequence of these needs, the Directors General of the five Nordic statistical institutes decided in November 1999 to establish a Nordic group for the development of statistics on the information society⁴⁶⁰.

⁴⁵⁹ http://www.idgl.lu/library/pdf-files/define-measure_ecomm-oct99.pdf

⁴⁶⁰ http://www.norden.org/pub/uddannelse/forskning_hojereudd/sk/Julkaisu_final.pdf

This group has developed a report consisting of three parts: ICT infrastructure, ICT sector in the economy, and the use of ICT and the digital divide – inequalities in the use of ICT. On each of these three parts they explore different issues, such as: telecommunication networks and related services; the human potential for ICT comprise the qualifications embodied in individuals; the importance of ICT industries in manufacturing and services, production, employment, and as a source of turnover; the importance of ICT products there are data on their production and on their role in foreign trade.

Also, in the use of ICT is measured in both enterprises and among individuals. New opportunities for commerce created by ICT applications are important topics in enterprises. As to individuals, besides basic statistics, such as the overall use of the computer and Internet, some evaluations are also presented from the perspective of the digital divide. As is known, the concept of the digital divide refers to inequalities in individuals' access to and use of ICT. Even though the Nordic Countries are among the most advanced ones in the adoption and use of ICT, differences in access to and use of ICT related to age, gender, education or place of residence is still important.

- **Comparison of E-Readiness Assessments Models. Bridges Organization.**

More information: <http://www.bridges.org/>

Available at: <http://www.bridges.org/ereadiness/report.html>

This report describes the various tools that are available and what they measure, to foster informed decisions about approaches to e-readiness assessment, as national governments consider their information technology policies and undertake development initiatives.

It concentrates predominately on how ready a society or economy is to benefit from information technology and electronic commerce. On closer examination, the range of tools used varies widely in their definitions of e-readiness and different methods for measurement. The report considers some of the methods such as: Harvard University's model which looks at how information and communications technologies (ICTs) are currently used in a society; APEC's method focuses on government policies for e-commerce; among others.

PART B

Some of these Latin America examples have taken as references some of the e-Readiness models described above.

- **Methodology proposal for measuring the Knowledge Society in Latin America countries 2003 – Centro de Estudios sobre Ciencia, Desarrollo y Educación Superior (REDES-Argentina). C. Bianco, G. Lugones, F. Peirano.**

More Information: <http://www.centroredes.org.ar>

Available at: <http://www.centroredes.org.ar/documentos/files/Doc.Nro5.ENG.pdf>

This methodological proposal “modular, gradual, flexible and cooperative” is based on a Knowledge Society Indicators Matrix which considers four sectors or activities: 1) Education, 2) Science and Technology, 3) Information Technology and High Added Value Services, and 4) Telecommunications.

In these four sectors, they have added a sub-matrix of Information and Knowledge Expansion and Use, which is organized along four main axes: a) infrastructure, b) skills, c) investments and accumulative efforts, and d) applications. These axes are crossed by four rows of actors: a) businesses, b) home, c) government, and d) institutions.

- **Manual of Bogotá 2001 – Red Iberoamericana de Indicadores de Ciencia y Tecnología (RICYT) / Organización de Estados Americanos (OEA) / Programa CYTED. H. Jaramillo, G. Lugones, M. Salazar.**

Available only Spanish at: <http://www.octi.gov.ve/documentos/archivos/62/manualdebogota.pdf>

This Regional (Latin America) *Manual of Indicators* related with the Technological Innovation has the main objective to systematize criteria and procedures of the construction of technological indicators through a common methodology of measures and analyses related to the indicators of Technological Innovation.

- **Methodology and Social Impact of the Information and Communication Technologies in Latin America and the Caribbean (MISTICA) – Proyecto**

Observatorio Latinoamericano y Caribeño del Impacto Social de las TIC en Acción
(OLISTICA) / Funredes / IDRC.

More information: <http://www.funredes.org/olistica/>

Available at: <http://funredes.org/mistica/>

The *MISTICA* project 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”⁴⁶¹

⁴⁶¹ Pimienta, Daniel and Barnola Luis. In: Bonilla, Marcelo and Cliche, Gilles (Eds). Internet and Society in Latin America and the Caribbean. Southbound Penang. USA. 2004. p: 389. (English version).

PART C

These are some examples of international and Latin America NGOs and networks that work with ICTs.

- **Access Foundation.**

<http://www.acceso.or.cr/>

Access is an NGO for the development, which has its headquarters in Costa Rica. *Access* develops many active programs in all Latin America. It offers technical assistance, training and support for the institutional development of local, national and international organizations that share its commitment to an equitable, participative and sustainable development, related also with ICTs.

- **Networks and Development Foundation (FUNREDES in Spanish).**

www.funredes.org/

This is an International NGO founded on 1993. It is dedicated to the diffusion of ICTs in developing countries, especially in Latin America and the Caribbean with the collaboration of international organizations, NGOs, States, and public and private administrations and institutions. *FUNREDES* aims to contribute to the regional development and integration in ICT matters.

- **Alfa – Redi.**

<http://www.alfa-redi.org>

Alfa-Redi is a Latin American NGO, dedicates to the formation, investigation, discussion and formulation of proposals related with policies about the information society. This NGO has three axes of action: 1) policies and regulatory frameworks of the information society; 2) traditional culture and ICTs which emphasizes the use of ICTs within indigenous communities; and 3) the monitoring of different ICT topics within Latin America –e.g. domain names, IP numbers, internet governance, to mention few-.

- **The Institute for Connectivity in the Americas (ICA).**

<http://www.icamericas.net>

The *Institute for Connectivity in the Americas (ICA)*, emerged from the 2001 Summit of the Americas, and it is a hemispheric organization that promotes the implementation of innovative uses of information and communication technologies (ICTs) for development. It strives to connect the Americas by co-funding projects, actively enabling partnerships, and by supporting knowledge creation as well as capacity building.

ICA's vision is that by connecting the people of the Americas, they will strengthen democracy, create prosperity, and help realize the region's human potential. The Institute seeks to facilitate the development of domestic and regional connectivity strategies by adapting and implementing proven models; and promoting the exchange of information and expertise. It is a unique tenet of the *ICA* that all supported programs must result in enhancing the region's capacity to participate in an increasingly knowledge-based society. All of the *ICA's* work is based on the support of innovative ideas that focus on the use of ICTs to solve traditional problems, and that offer practical solutions to overcome the barriers that have hindered the socio-economic development of the region.

- **The Association for Progressive Communications (APC).**

<http://www.apc.org>

The *Association for Progressive Communication (APC)*, founded in 1990, is an international network conformed by organizations from the civil society, which are working with the strategic use of ICTs. The mission of the *APC* is to promote and support organizations, social movements and individuals regarding the use of ICTs, in order to create a community that shares strategic initiatives making some significant contributions to the human development, the social justice, the participative democracies and the sustainable societies, not only practical but also theoretical.

- Red ISTIC.

<http://www.redistic.org>

This Network called *Social Impact of the Information and Communication Technologies* (RedISTIC in Spanish) was consolidated on 2003. It is a network that joins several civil society organizations and academics from the south that works closely related with ICTs as tools for development. Its main objective is to influence in ICT public policies in the region.

BIBLIOGRAPHY

Accenture, Markle Foundation, United Nations Development Programme. Creating a Development Dynamic: Final Report of the Digital Opportunity Initiative. July 2001.

<http://www.markle.org/news/DigitalOpportunityInitiativeFinalReport.pdf>

Acosta, Alberto. Article: La Deuda Externa de América Latina: Origen, Evolución y Alternativas de Solución. Centro Andino de Acción Popular – Ecuador Debate, number 45. December, 1998.

<http://adb.unm.edu/econ/content/ecodeb/1998/december/deuda1.htm>

Acosta, Alberto. Article: ¿ Un País Enfermo por Vocación? Revista Economía. February, 2004.

http://www.lainsignia.org/2004/febrero/econ_034.htm

Annual Inform of Activities 2004. SRI Institution. Quito, 2004.

http://www.sri.gov.ec/download/pdf/informe_actividades_2004.pdf

Apolonia, Bibiana. Argentina: Gobiernos Electrónicos en América Latina: Nueva Forma de Recrear los Espacios Públicos o Nuevos Escenarios de Poder? Revista de Derecho Informático Alfa-Redi.

2003. <http://www.alfa-redi.org/revista/data/68-11.asp>

Balarezo, Francisco. Report view: El Internet en Ecuador. Dec, 2003.

<http://www.nsrc.org/db/lookup/ISO=EC>

Barzallo, José Luis. Article: El Gobierno en Línea en el Ecuador. Law Journal.

<http://www.dlh.lahora.com.ec/paginas/judicial/PAGINAS/D.Informatico.41.htm>

Beltrán, Luis Ramiro. Aliens Premises, Objects, and Methods in Latin American Communication Research. Communication Research 3. 1976.

Bonilla, Marcelo and Cliche, Gilles (Eds). Internet and Society in Latin America and the Caribbean.

FLACSO/International Development Research Center. Ecuador. 2004.

Borja, Raúl. Un Fantasma Recorre el Ecuador: Es el Fantasma de la Democracia! Quito – Ecuador.

April, 2005.

Bramwell, Hassan. Conectados Magazine. Article: Gobierno Electrónico: Lo Posible y lo Deseable. No.20. Quito. Febrero, 2002.

Burch, Sally. Article: Quito: Desobediencia Civil. ALAI. April, 2005.

Cardoso, Fernando Henrique. Journal of Democracy. Article: Democracy as a Starting Point. National Endowment for Democracy and the Johns Hopkins University Press. January 2001.
http://muse.jhu.edu/journals/journal_of_democracy/toc/jod12.1.html

Cardoso, Fernando Henrique and Faletto, Enzo. Dependency and Development in Latin America. Berkeley. University of California Press. 1979. (Spanish original version 1969).

Castells, Manuel. The Information Age: Economy, Society and Culture. Vol 1: The Rise of the Network Society. Blackwell Publishers. UK. 2000. Second Edition.

Castells, Manuel. The Internet Galaxy: Reflections on the Internet, Business, and Society. Oxford University Press. UK. 2001.

Castells Manuel. Globalización, Tecnología, Trabajo, Empleo y Empresa. Revista La Factoria No. 7, October 1998. <http://www.lafactoriaweb.com>

CORPECE Article: Guayaquil, Más Ciudad a través del Gobierno Electrónico. Electronic bulletin: El Informante. CORPECE. July, 2004. www.corpece.org.ec/informante/05_09_jul_04.htm.

CORPECE Article: Gobierno Electrónico en Ecuador. Electronic bulletin: El Informante. CORPECE. April, 2005. www.corpece.org.ec/content.htm

Chandhoke, Neera. Article: What the Hell is "Civil Society"?. March, 2005.
<http://www.opendemocracy.net/debates/article-3-122-2375.jsp>

De Cerqueira César, José Luiz. Article: Lula sigue su pelea con Microsoft y difundirá Linux fuera de Brasil. APC. April, 2005. <http://lac.derechos.apc.org/cnoticias.shtml?x=33054>

Dorfman, Ariel and Mattelart, Armand. Para leer al Pato Donald: Comunicación de Masa y Colonialismo. Siglo XXI. Mexico. 1972.

Estenoui Madrid, Javier. La Televisión Mexicana ante el Modelo de Desarrollo Neoliberal. Fundación Manuel Buendía. Mexico. 1992.

Flores, Sergio y Villao, Freddy. Documento de trabajo auspiciado por el Proyecto Andino de Competitividad: La Comunidad Andina y su Preparación para el Mundo Interconectado: Ecuador. Escuela Politécnica de Litoral.. Ecuador. Marzo, 2001.
<http://www.cid.harvard.edu/andes/Documents/WorkingPapers/IT/ITEcuador.pdf>

García Canclini, Néstor. Hybrid Cultures: Strategies for Entering and Leaving Modernity. University of Minnesota Press. USA. 1995. (Spanish original version 1989).

García Canclini, Néstor. Consumidores y ciudadanos: Conflictos Multiculturales de la Globalización. México. Grijalbo. 1995.

Global Agenda. Article: A Coup by Congress and the Street. April, 2005.
http://www.economist.com/agenda/displayStory.cfm?story_id=389373

Gómez, Ricardo; Martínez, Juliana; and Reilly, Katherine. Acción al Margen de la Conectividad: Experiencia de América Latina y el Caribe. Cooperación Sur. Naciones Unidas. Número 1. 2001.

González-Manet, Enrique. Paper: Nuevas Formas de Comunicación y Cultura: ¿Cómo Enfrentar las Nuevas Tecnologías?. Telos number 38. 1994.
http://www.quadernsdigitals.net/index.php?accionMenu=hemeroteca.VisualizaArticuloIU.visualiza&articulo_id=6267.

Goodnow, Katherine, Córdova, Verónica and Venegas, Heidi. ICT and Multicultural Practice. Intermedia, University of Bergen. 2004.

GTCT. Siete Exigencias: Principios Prioritarios Propuestos por la Sociedad Civil. February, 2003.
www.movimientos.org/foro_comunicacion/

Hacker, Kenneth L. and Van Dijk, Jan (Eds). Digital Democracy: Issues of Theory and Practice. Sage Publications. London. 2000.

Hilbert, Martin and Katz, Jorge. Toward a Conceptual Framework and Public Policy Agenda for the Information Society in Latin America and the Caribbean. ECLAC. Santiago de Chile. 2002.

<http://www.eclac.cl/publicaciones/DesarrolloProductivo/7/LCL1807P/LCL1807.pdf>

Hilbert, Martin and Katz, Jorge. Building an Information Society: a Latin American and Caribbean Perspective. ECLAC. 2003.

<http://www.eclac.cl/publicaciones/DesarrolloProductivo/5/LCL1845I/Chap2.pdf>

Institutional Document. Lineamientos Generales del Programa Quito Digital. Municipality of the Metropolitan District of Quito (MDMQ). Projects and Strategic Futurology Unit. Quito. April, 2003.

Institutional Document. Acuerdo de Constitución del Comité Gestor del Programa Quito Digital. Municipality of the Metropolitan District of Quito (MDMQ). Projects and Strategic Futurology Unit. Quito. April, 2003.

Institutional Document. Statutes of the Corporation Technological Park of Quito. September, 2003.

International Telecommunication Union (ITU) - World Telecommunication Day. The Internet: Challenges, Opportunities and Prospects. 17 May 2001.

<http://www.itu.int/newsarchive/wtd/2001/ExecutiveSummary.html>

Jaramillo, Fabián. How Computers are Being Used in Secondary Schools? Research report realized during the 22nd Advanced Course on National Security for the Development, National Higher Education Institute. Collection: Computing applied to education, volume 1. Quito-Ecuador. Editorial Abya-Yala. 1995.

Juan Candial, Victoria. Paper: From Resistance to Organized Social Movements. University of Essex, Department of Government. September, 1995.

Larrea, Carlos. Pobreza, Dolarización y Crisis en el Ecuador. Ediciones ABYA-YALA. Quito-Ecuador. 2004.

Leask, Marilyn (Ed). Issues in Teaching using ICT. Routledge. UK. 2001.

León, Osvaldo; Burch, Sally; Tamayo, Eduardo. Movimientos Sociales en la Red. Agencia Latinoamericana de Información (ALAI). Quito. 2001 (Spanish edition).

León, Osvaldo; Burch, Sally; and Tamayo Eduardo. Social Movements on the Net. Agencia Latinoamericana de Información (ALAI). Quito. September, 2001 (English edition).

León, Osvaldo, Burch, Sally, and Tamayo, Eduardo. "Se cayó el sistema": Enredos de la Sociedad de la Información. Agencia Latinoamericana de Información (ALAI). Quito. 2004.

Lucero, José Antonio. High Anxiety in the Andes: Crisis and Contention in Ecuador. Journal of Democracy 12.2. National Endowment for Democracy and the Johns Hopkins University Press. 2001. http://muse.jhu.edu/journals/journal_of_democracy/v012/12.2lucero.html

Luna Tobar, Luis Alberto. Latin America in movement. Article: Carácter y Salidas a la Crisis en el Ecuador. ALAI. March, 2005. http://www.alainet.org/active/show_text_en.php3?key=7843

Mansell, Robin. Digital Opportunities and the Missing Link for Developing Countries. Oxford Review of Economic Policy, VOL 17, No. 2. Oxford University Press. 2001.

Marques de Melo, Jose. Development of the Audiovisual Industry in Brazil from Importer to Exporter of Television Programming. Canadian Journal of Communication, 20 (3), 317-328. 1995.

Martín-Barbero, Jesús. Communication, Culture and Hegemony: From the Media to the Mediations. Sage Publications. UK. 1993 (1987 Spanish edition).

Martín-Barbero, Jesús. Medios y Culturas en el Espacio Lationamericano. Revista de Cultura Pensar Iberoamérica. Número 5.

Newspaper El Comercio. Editorial: El Truncado Acceso a la Información. Quito. May, 2005.

Newspaper El Comercio. Article: ¿Cuál es la Situación de la Educación Ecuatoriana en el Contexto Internacional? Quito – Ecuador. April, 2005.

Newspaper El Comercio. Flores y Flores, Thalía.. Article: Sepulcros Blanqueados! Quito – Ecuador. April, 2005.

Newspaper El Comercio. Article: La Ley de Educación Entra a Discusión. Quito – Ecuador. August, 2004.

Newspaper El Comercio. Article: ¿Cuál es la Situación de la Educación Ecuatoriana en el Contexto Internacional? Quito – Ecuador. April, 2005.

Newspaper el Comercio. Article: El Presupuesto Decae mientras la Pobreza Sube. Quito – Ecuador. March, 2005.

Newspaper "La Hora". Article: Quito en el Ciberespacio. February, 2005.

Newspaper el Comercio. Aharonian, Aram. Article: El canal Telesur es una Alternativa al Mensaje Hegemónico del Norte. Quito – Ecuador. June, 2005.

Nin Novoa, Rodolfo. Article: Uruguay: Strong Government support to Community Radios. AMARC-ALC. May, 2005.

NUA: The World's Leading Resource for Trends & Statistics.
http://www.nua.ie/surveys/?f=VS&art_id=905355410&rel=true

Orduna, Jorge. O.N.G. Las Mentiras de la Ayuda. Sur Editores. Quito. 2005.

Organización de Estados Iberoamericanos. Enero – Abril 2004. <http://www.campus-oei.org/pensariberoamerica/ric05a01.htm>

Ortiz, Renato. Cultura Brasileira e Identidade Nacional.. Brasiliense, São Paulo, 1985.

Ortiz, Renato. Cultura e Modernidade. Brasiliense, São Paulo. 1991.

Pacific Council on International Policy. Roadmap for E-Government in the Developing World. April 2002.
<http://www.pacificcouncil.org/pdfs/e-gov.paper.f.pdf>

Pasqualini, Rebekah. Article: Grassroots Organisations and the New Information Technologies: the Personal Computer, Email, the Internet and the World Wide Web.

<http://communication.students.rmit.edu.au/projects/burma/grassroots.html>

Pimienta, Daniel and Barnola Luis. En la Búsqueda Colectiva de un Impacto Social Positivo a la Internet Latinoamericana. Comunidad Virtual MISTICA. 2001.

Reilly, Katherine and Echeberria, Raúl. El Papel del Ciudadano y de las OSC en el e-Gobierno: Un Estudio de Gobierno Electrónico en Ocho Países de América Latina y el Caribe. APC ORG. January, 2003.

Report on Human Development in Ecuador, 2001. The Information and Communication Tecnologi@s for Human Development. United Nations Development Programme, 2001.

Roggiero, Roberto and Suquilanda Manuel. Sustainable Management of Production and Commercialisation Systems/Information and Communication Technologies in Ecuador. Quito, May 2003.

Rosenberg, Marc J. E-Learning: Strategies for Delivering Knowledge in the Digital Age. McGraw-Hill. USA. 2000.

Tavangarian, Djamshid. Is e-Learning the Solution for Individual Learning? Electronic Journal of E-Learning. Vol. 2. December, 2004. <http://www.ejel.org/volume-2/vol2-issue2/v2-i2-art4.htm>

Third Global Forum: Fostering Democracy and Development Through E-Government. Naples. 15-17 March 2001. www.globalforum.it/htm/frame/inglese/inglese.htm

Torres, Rosa María. Learning Communities: Re-thinking Education through Local Development and Learning. Paper presented at the "International Symposium on Learning Communities", Barcelona Forum 2004.

Torres, Rosa María. La Profesión Docente en la Era de la Informática y la Lucha contra la Pobreza. UNESCO-OREALC. Santiago de Chile. Agosto, 2000.

Trend, David. Cultural Democracy: Politics, Media, New Technology. State University of New York Press. New York. 1997.

Valdiviedo, Alfredo. Newspaper Hoy. Article: La Brecha Tecnológica se ahonda en el Ecuador. January 2005. www.hoy.com.ec/impnoticia.asp?row_id=195196

Van Dijk, Jan. The Network Society. Sage Publications. London, UK. 1999.

Vargas Hernández, José. Paper: Algunos Mitos, Estereotipos, Realidades y Retos en Latinoamérica. Universidad de Guadalajara. México. <http://arje.hotusa.org/socio4.htm>

Villachica, Marilu. Article: Telesur on Air: The New Voice of Our America. Ourmedia. April, 2005.

Villao, Freddy and Flores, Sergio. La Comunidad Andina y su Preparación para el Mundo Interconectado: Ecuador. Proyecto Andino de Competitividad. Escuela Politécnica del Litoral. Ecuador. Marzo, 2001.
<http://www.cid.harvard.edu/andes/Documents/WorkingPapers/IT/ITEcuador.pdf>

Waisbord, Silvio. The Ties that still Bind: Media and National Cultures in Latin America. Canadian Journal of Communication – Vol.23, No.3. 1998.

Webster, Frank. Theories of the Information Society. Routledge. UK. 1995.

World Bank World Development Indicators Database, 2001; Piracy data from Business Software Alliance.