The Information Society in the 21st Century: A Requisite for Development

Best Practices and Lessons Learned

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Preface

This book was born in the context of the World Summit on Information Society, under the auspices of the United Nations. It addresses two fundamental ideas which have been presented throughout the whole process of preparation of the Summit, as well as in the philosophical underpinnings of the "e-Europe 2005" Action Plan, approved by the European Council celebrated in Seville in June, 2002.

We are convinced that the development of the Information Society, far from being an end in itself, is an objective, insofar as it contributes to the improvement of our citizens' quality of life. There have been many initiatives in recent years designed to deliver the benefits of Information and Communications Technologies (ICT) to all regions and social levels. We must build upon these existing initiatives so as to learn from their experience and continue to advance along proven lines.

With preparations for the Summit already underway, and keeping in mind both premises, we thought it might be useful to edit this book of practical experiences and lessons learned. Of the great variety of issues which we are called upon to deal with, we feel that priority should be given to two basic questions related to development: the issues of e-inclusion and electronic learning, both of these from the point of view of organized civil society and the private sector.

We have even learned some lessons in the preparation of this book. Firstly, we have confirmed the high level of commitment on the part of civil society and the private sector, as well as the capacity for innovation when it comes to including least favoured sectors in the process and encouraging ICT learning programs for all citizens. Throughout the entire process of recompilation of data we have experienced a variety of practices with high levels of quality, some of which we never even suspected at the outset of the work.

We have also concluded that our task could never embrace all of the relevant experiences. In order to meet the publication deadline, which coincides with the first phase of the Summit in December, 2003 in Geneva, we have had to limit our selection. Nevertheless, we are at work fleshing out some subjects with an eye to the second phase of the Summit, to be celebrated in Tunis in November of 2005.

We are sure than other initiatives of this type will arise in the future, in the same way that similar initiatives are being carried out in other countries. Our only aspiration is that this book might contribute to the initiation of a global process of knowledge and experience sharing capable of inspiring our colleagues to resolve problems similar to those which we have faced in this project.

If this project permits any reader to identify a useful and feasible action which fits his or her necessities and resources and can solve a problem or stimulate interchanges among the various actors with interest and experience in these fields, we will have made a small contribution. We feel, after all, that the object of a guide to best practices is its utility. It has not been our objective to present a theoretical treatise, rather a realistic and pragmatic exercise. This has been our intention throughout the preparation of this book. We hope our readers will consider that we have succeeded.

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Acknowledgements

As this book has been a collective project, our list of acknowledgements is a long one. Even so, we have not been able to include everyone who has contributed to the effort.

In any case, we want to extend our warmest appreciation and express recognition to all of the authors who, with their time and generosity, have made this book possible. This is just a first step on a path which continues into the future with other, similar initiatives designed to identify sound ICT practices in Spain and to deepen the analysis of certain development-critical subjects. Naturally, our determination to follow this path, which leads to the meeting in Tunis in 2005, entails once more the abuse of the generosity of those Spanish ICT professionals whom we will call upon to nourish the project with fresh ideas and realities.

So, we extend our appreciation not only to all of the authors whose names appear throughout this book, but as well as to all the teams who have worked with them.

At the risk of forgetting someone, we would like to extend our special appreciation for help and encouragement to a few people who have encouraged us enthusiastically from the outset: Manuel Acevedo, Juan Luis Castro, Ana Moreno, Manuel Álvarez, Ana Paredes, Arturo Spiegelberg, Anatolio Alonso and Carlos Mayordomo. And, of course, we appreciate the forbearance of Arcadio López and his team, the people responsible ultimately for the edition and printing of this book.
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Prologue

The coming Information Society World Summit, to be held in two phases (Geneva 2003-Tunis 2005), is going to give all of its participants an opportunity to understand better the mechanisms which influence the development and consolidation of the Information Society, and to become acquainted with the impact the age of information and knowledge is having and will continue to have on the international community. This Summit will also lay down the foundations for joint action which will lead to concerted development aimed at overcoming the digital gap.

The Summit revolves around two principal arguments:

- To establish the keys to the development of an Information Society for everyone
- The contribution of the Technologies of Information and Communication to economic, social and human development, and how their use can contribute to the achievement of the objectives enounced in the United Nations Millennium Declaration.

The Information Society is a reality in many countries, which have transformed their models of living, working and leisure. These transformations have contributed positive perspectives in economic, social and human terms, though we must not lose sight of their dangers and drawbacks. It is for this reason that the objective of the Summit is the establishment of the bases capable of permitting the creation of an Information Society for everyone, promoting its development in less-favoured areas and strengthening its use as an active tool for economic and social development. In this connection the Summit assumes one of the principles of Río 1992, according to which "all human beings are centres of concern for development." The development of the Information Society should be for the good of individuals and this affirmation should constitute the principal ethical key to be kept in mind always.

In order to reduce the digital gap and encourage sustainable development in a knowledge-based society it is necessary to establish priorities in the actions designed to develop the Information Society. Among the most important of them, without a doubt, are those related to electronic inclusion or e-inclusion, and electronic learning, either e-learning or e-formation.

E-inclusion, understood as access to technologies and adaptation to the necessities of citizens, especially the most disfavoured groups, is the principal challenge of the digital revolution. The information society's potential to create benefits for all citizens is beyond all doubt though, at the same time the threat exists of broadening the gap between the info-rich and the info-poor. The digital gap reflects inequalities which exist between and within countries. So e-inclusion has the objective of reducing differences and serving as an instrument of social cohesion. To achieve this objective it is necessary to undertake actions which permit access and participation for all, which take into consideration questions of gender, and which are capable of integrating the use of ICT in the daily life of our society.

E-formación, can be understood as the development of capacities which permit access to knowledge via new technological instruments, precisely those of ICT. As a tool of access to knowledge, e-formation must function, on the one hand, in its role of basic formation in the use of technology and, on the other, as a contribution to the models of teaching and the improvement of education, including the ongoing formation of teachers and professionals in order to upgrade their capacities.

The Spanish vision, which is dealt with in more detail in the text which is to be presented at the Summit, has spurred interest in the Ministry of Science and Technology in the creation of a

publication where highly qualified and experienced persons can reflect fruitfully on the path to development through the Information Society. This publication will include practical measures and lessons learned by these experts. In this way it is hoped that the Spanish participation in the Summit will be richer and will involve civil and private sectors as important agents of transformation in the debate.

The principal objective of this publication is, therefore, the compilation of best practices and lessons learned in relation with the currents which Spain promotes within the European contribution to the Summit: e-inclusion and e-formation.

It's also about situating these recommended practices in a structured discourse and with a component of reflection about the development model which the Information Society should follow. In this way this publication can become a useful tool for guiding those responsible for enlivening development processes. It is in these recommendations where solutions which are already working in other places can be found, as well as warning signs of dangers which other experiences have discovered.

Another goal which this publication pursues is that of going deeper into the concepts of "access" and "Information Society" for everyone, as something which goes beyond the infrastructure and rests on a package of measures, among which is the question of **providing formation and integrating technology into the life of the society.** In the measure in which this is understood, the possibilities of putting ICT at the service of development will be greater and their efficiency as tools of development fuller.

By the same token, an additional proposal, because of our cultural proximity and the bonds which unite us, is that of converting the publication into a valuable instrument for the **Iberoamerican** community, in the hope that the Spanish experience, articulated by the model of European harmonization, might be useful for our common project.

Lastly, this publication is considered a first exercise in the framework of the Information Society World Summit, which has been carried out in time for the first phase in Geneva. Due to this temporal restriction it has not been possible to present an exhaustive compilation of best practices in all walks of the private sector, civil society and public administrations, rather gathering together a sample, with special incidence in the first two. We hope to be able to prepare a more complete edition for the second phase, an edition which will include more examples. In the second phase, furthermore, we will be able to deepen our research into subjects, methodologies and practices of special relevance. And of course, from here we extend our thanks to everyone who has disinterestedly contributed his or her experience to make this book a reality.

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1. Introduction

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1.1. Presentation

The Information Society is evolving at a hurtling pace, in which the accelerating convergence among telecommunications, radio broadcasting and information technologies, that is, the information and communications technologies (ICT), is generating new products and services as well as new forms of managing organizations. At the same time, as new markets open to competition, commercial, social and professional opportunities abound. The world is undergoing a fundamental transformation which is leading twentieth century industrial society at high speed into the Information Society of the twenty first. Beyond the development of industrial society, the Information Society opens a gamut of possibilities to developing countries permitting them to reach their goals via these alternative means.

This dynamic process announces a fundamental change en every aspect of our lives, including the diffusion of knowledge, social behaviour, economic and business practices, political compromise, the communications media, education and health, recreation and entertainment. We find ourselves in the midst of a revolution, perhaps the greatest which mankind has ever experienced. In order to be able to benefit the entire community, the successful continuous growth of this new dynamic requires a worldwide debate and a harmonization in specific areas.

On December 21, 2001 the United Nations General Assembly adopted a resolution (A/RES/56/183) endorsing the organization of the World Summit on the Information Society, the preparation of which fell principally to the International Telecommunications Union, other interested United Nations organisms and the host countries.

The World Summit on the Information Society offers an opportunity to come together in an attempt to obtain a better understanding of this technological revolution and its repercussions in the international community. To define the role of the diverse representatives (member states, United Nations organisms, private sector and civil society) in the establishment of the Information Society worldwide is also central to the Summit and its preparations.

It is hoped that the Summit might adopt a Declaration of Principles and a Plan of Action which will facilitate the effective development of the Information Society and help reduce the digital gap, as well as contributing to the realization of the objectives of the Millennium Declaration. The reach and nature of this ambitious project will require strategic associations between private and public entities. With this in mind, representatives of the highest levels of government, the private sector, civil society and the NGO's will attend the meetings. It will be a unique opportunity for the world community to debate and configure the new Information Society for all people.

The Summit is organized along the lines of prevailing United Nations practices, under the distinguished patronage of Kofi Annan, Secretary General of the United Nations, with the management function of the International Telecommunications Union, in cooperation with other interested organisms of the family of the United Nations. It will take place in two phases:

- *First Phase: Geneva 2003*

  The first phase of the World Summit will take place in Geneva, from the 10 to the 12th of December, 2003, hosted by the Swiss government. These meetings will deal with

different subjects related to the Information Society and will adopt a Declaration of Principles and a Plan of Action, which will resume all of the subjects dealt with in the meetings.

➔ *Second phase: Tunis 2005*

The second phase of the World Summit will take place in Tunis, hosted by the Tunisian government from November 16 to 18, 2005. These meetings will serve to reinforce the achievements of Geneva and to set out new challenges.

The resolution A/RES/56/183 of the General Assembly encourages all U.N. delegates, especially those of the ICT Task Force, to offer effective contributions and to participate in an active way, while encouraging other intergovernmental organizations, civil society and the private sector to participate actively in the intergovernmental preparatory process of the Summit and the Summit itself. It is hoped, therefore, that all participating organisms will be highly motivated and involved.

All governments have a stake in the Information Society, even when their positions may be different due to their varying economic levels and/or infrastructures. The role of governments is fundamental in the diffusion of the benefits of the Information Society to all citizens through the developments of national and worldwide programs and working frameworks designed to meet the challenges of the Information Society .

Within their seeking of the common good, governments can create awareness, facilitate public access to information, as well as placing the foundations which permit all their citizens to benefit from ICT in terms of improvements in quality of life, social services and economic growth.

The private sector plays an active role along with governments and civil society, by offering an economically viable model to achieve development goals around the world. It also contributes, in an instrumental manner, to the creation of infrastructure which gives universal access to information and value added services offered by ICT. Its participation in the Summit will help to create a solid base for economic development through new, stable and highly qualified job opportunities, and for creating local industries for hardware, software, content and services. This sector will also contribute to creating new types of collaboration with the civil sector and public administrations.

Civil society, on the other hand, is playing and active role civil in attracting attention to the social and cultural consequences of current tendencies, and the necessity to introduce democratic responsibility in the strategic options adopted at all levels. Thanks to this sector's diversity and, frequently, practical approach to matters, civil society has become a fundamental participant in the renewed international collaboration called for by the United Nations Secretary General.

In order to carry out this Spanish preparatory process, an interministerial commission has been created, presided over and coordinated by the Ministry of Foreign Affairs, which includes representatives of all the ministries, whose collaboration will configure the final Spanish contribution.

In parallel, and with the purpose of structuring their contribution, the Ministry of Science and Technology is coordinating, especially in the civil and private sectors, the work on the documents for the Summit:

- A thematic contribution
- A publication which compiles best practices and lessons learned, that is to say, this book

Both documents are part of the Spanish contribution to the Information Society World Summit, and are centred on the practical measures which can be carried out to promote electronic learning and the inclusion (e-learning out of e-inclusion), subjects which Spain has promoted vigorously within the European position.

The thematic contribution is a brief document oriented towards the exposition of the practical measures which might form part of an action plan, while this book treats each one of these lines of pursuit in more detail, presenting the context and the process of reflection and bringing together examples of best practices which illustrate the proposed measures in the thematic contribution.

1.2. Objectives

Let us try to answer a series of questions. Let's try briefly to define the context which this book arises from: the Information Society World Summit. What is the object of this Summit and how does this book fit into the process?

What and for Whom?

If we try defining the terms in the title, "Information Society World Summit," we won't have too much trouble with the word "Summit." It refers to a dialogue among the world's countries under the umbrella of the United Nations, regarding specific information which the Summit deals with. The final products of these meetings tend to be a Declaration of Principles and a Plan of Action which tries to provide answers to global challenges, among them in this case, overcoming the digital gap and achieving the implantation of the Information Society worldwide within the goals of the Millennium.

The term "Information Society" (abbreviated "IS") is more complex. There are different definitions and it's not easy to arrive at a unique meaning. Furthermore, there are objections as to whether one should refer to the Information Society or the Knowledge Society (a more advanced concept). But beyond definitions is the zone of perceptions. In the European context it's not difficult to identify which actions are associated with the IS. We have been living now for several years with the concept; it's even incorporated in the names of the ministerial departments and forms part of Europe's political objectives (though they refer to the term "economy of knowledge"). It is reflected in national and regional strategies. It is part of our lives.

The use of the tools known as "Information and Communications Technologies" (ICT) in all the processes of our society, in the economic, social, cultural and political fields, is basically what has given rise to the IS. It is true that our idea is biased towards the digital, that is the use of the most modern of the ICT. We relate IS with the most advanced technologies: Internet, wide band communications, mobile telephony, digital television... This whole collection of technologies can be summed up by the term "Net Society," coined by Manuel Castells. We must keep in mind that we weren't speaking of the Information Society ten years ago, even though we were making intensive use of traditional ICT's, previous to the existence of the Internet, the web of webs, and the possibility of accessing its massive content. Merely having telephones, radios and computers did not seem to us synonymous with being in the IS, since that concept didn't even exist. However, for many countries, the situation which we were in ten years ago before Internet was an integral part of our lives, is considered being part of the IS and remains, unfortunately, a distant goal.

The IS is a flexible concept which is constantly evolving. Even so it's very tangible. It is evident in all of the forms in which the ICT's, from the most traditional to the most modern, facilitate our lives. The IS is a clear concept for the most advanced societies because it fits our lifestyle and our values. It is something which permits us to save time, minimize the distance factor and permits us to improve productivity in our work. It's something which infiltrates all the processes and activities of our work, our leisure, our "Western lifestyle," supported in such pillars as our market economy and our Democratic State. Therefore it seems natural to us that the IS be present as a tool which facilitates and leverages all of these processes.

Nevertheless this obviousness is not so clear for all of the world's communities. There may be communities which, confronted with these tools, prefer not to take advantage of them for the moment (as has been the case in some indigenous communities in Mexico) because they see in these technology tools the danger which they pose for the survival of their traditional communities and ways of life. Other communities, however, are able to perceive the value of these tools, precisely to conserve their communities or perpetuate the special knowledge of their cultures, knowledge which might otherwise be lost.

To be inclusive is not the same as being intrusive. One cannot impose the use of ICT, the advent of the Information Society. We can demonstrate its apparent benefits, and if a given community is convinced by the examples, it may demand their use or reject it, perhaps until a later date. The use of ICT is the end product of a long process towards progress, such as it is understood in the Western world. We can and should share it, but not impose it.

The use of ICT in transforming our societies in IS is a rising value in developed countries. We consider the ICT's as positive tools for the development of our towns and citizens. Though this argument may be valid, it can also encounter objections. Developing countries can consider it as a desirable goal, as it permits the enhancement of development processes, but where should they place it on their scale of priorities? If the ICT's are really tools for global development they should be preeminent in all climes. However, there are people prepared to affirm that there are other more urgent priorities in such critical fields as health and education. If we confront the goals of the Millennium Declaration (the Millennium Development Goals, MDG) with the use of ICT, some may say, not unjustly, that having a computer is not synonymous with not going hungry. Therefore it is necessary to maintain a well balanced approach to these questions. The ICT's are, first and foremost, a new component to keep in mind when designing development programs and strategies.

The Summit is the occasion to point out that these tools exist and can help people and communities to solve everyday problems, to improve the conditions of their lives, whether in developing or developed countries. They are not toys which only make sense in the context of developed countries. They're an important element in designing the future of all societies. What's more, today we can show examples of cases in which the ICT's have contributed proven and sustainable solutions. We can show paths which have led to success and others to failure. And that is information which is vital if we want to go forward.

The "Why"

Clearly the role of the ICT, like that of any other tool, is to serve the community. The ideal approach is, therefore, that each community identify its own necessities and, based on this analysis, decides if the ICT's can help to cover them or if, on the other hand, they can be resolved by more modest solutions.

ICT and Internet are far from synonymous. There are experiences reflected in this book which demonstrate that fact. For example, there still remains a place for the work of a simple radio station in fields such as health or education.

Although websites are currently perceived by the layman as the ultimate manifestation of ICT, they are far from being the only one. And the IS is being built utilizing all the ICT, from the simplest to the most complex. An intelligent use is that which permits us to choose in each case the appropriate tool for the problem to be solved. It is our great luck that the toolbox called "ICT" is constantly being updated with new resources and persons who know how to use them, from whose experience we can all learn.

Global Approximation

In discussing the use of ICT we are not facing specific or isolated questions but basic problems. For example, access to ICT is a complex term which includes at least the following factors: the availability of an infrastructure capable of offering adequate connectivity, assumable costs and prices and that the user knows how to use the tools. In this way, a frequently used solution for providing ICT access to remote locations, where it is not appropriate to provide access for each home, is the establishment of centres for community access. This is not a question, however, of promoting a network of community access centres or telecentres per se, but only insofar as they can be useful to the communities where they are installed. This entails not only providing physical access, but also training in the use of an ongoing, sustainable resource. We must also keep in mind the specific conditions and needs of the communities. Problems are not solved by erecting a building or filling a room with computers. The centre must be integrated in the community, provided with qualified personnel capable of using ICT tools to solve people's problems. It is even more important that these technicians help people to use the tools themselves to solve their own problems in the future. Under this light, qualification is more comprehensive than formation. It's not simply a question of learning to use Excel, rather how I can use a spread sheet to enhance the functioning of my small business. Qualification takes more time. At the end of the day, behind every tool there is a person, and people require time to integrate into the IS. It is not a question of a click of a mouse; it's a longer process.

The solutions are not simple because underlying of all of them is the human component, and human beings cannot be reformatted in five minutes. Their process of change and maturation requires more insistence. For example, electronic public administration or e-government is not simple a matter of mounting a website for the Ministry of the Presidency. That may be the façade, but on the inside it presupposes a restructuring of processes and the formation of public servants in the new approach designed to approximate the public administration to the citizens. The same phenomenon is at work in the question of electronic health care. It's not simply a matter of an appointment application, rather the incorporation of ICT to facilitate all the processes of a health system. If there is no system in place capable of being improved, ICT cannot invent one. It is for this reason that we say that we need a global approach to problems which admit of ICT solutions which, along with other techniques, will help to overcome basic deficiencies.

This Book

In this book of best practices we have chosen as the central issues those related to qualification and education, in keeping with the ancient Chinese adage that "It is better to teach a man to fish than to give him fishes." It's clear that no fish are going to appear with a simple click of a mouse, but perhaps ICT tools can help the fisherman to capture or commercialise his catch. Like any living being, this book has grown beyond its initial pretensions, but we have preferred

to give free rein to all of our collaborators in sharing their experiences. The book is centred more in initiatives of the private sector and civil society, in keeping with the philosophy of the Summit which insists that these sectors adopt this process as their own. We haven't tried, therefore, to offer an institutional vision of the many and varied practices which are being implanted in ministerial departments or other entities of local or regional government. Nor does this represent an exhaustive compilation of best practices in the private sector and civil society. It's not more than an initial approximation. If there should be a second edition of this book, on the occasion of the second phase of the Summit in Tunis, we will certainly offer a richer panorama. But this is our inaugural offering.

From a formal point of view, the book is structured in three well differentiated parts. In the first part we present the context in which the debate takes place and where solutions are suggested, observing from the European point of view the challenges which the new Millennium offers and the existence of the digital gap.

The second part of the publication, **the debate**, is structured around a model which proposes the elements necessary for the development of the Information Society. This structure takes the form of a pyramid, the base of which is occupied by the necessities of citizens. On top of this base, in successive layers, we find civil society, the private sector and the public administration, as agents involved in change, with e-learning and e-inclusion as key activities for development, and the transformation of processes and infrastructure as the ultimate requisites. The contributions of the group of experts has been compiled in accordance with this structure, though their participation has not been limited to that of filling a small plot in the scheme, rather their reflections and examples have served to construct a solid, commonly shared point of view within the proposed model.

Lastly, in the **best practices and lessons learned** chapter, the book covers the experiences from the debate which can best be put into practice, with emphasis on questions of e-inclusion and electronic learning. Thus we have assembled both the examples included in the debate by the authors, as well as others which we came across and seemed relevant and complimentary to the former. Not only have we chosen best practices in the Spanish context but also from international experiences. From these examples we have tried to draw a set of valid conclusions regarding exemplary practices and problems to be sidestepped.

The book is complemented with a CD which includes most of the documents to which the bibliography refers.

2. Context

2. Context

The development of the Information Society in the twenty-first century, as we note in the title of this book, is going to work itself out in a context marked by **new challenges and new opportunities** which the new century seems to offer. In the growing context of globalisation these challenges arise on a worldwide scale, but our "spaceship earth" travels with compartments which are all too unequal.

The new Millennium should assure the necessities which are basic to development as a first inexorable step towards the elimination of these differences and for the achievement of those basic objectives, the technologies, protagonists of the Information Society, have an important service role.

Nevertheless, the possession and use of these technologies are also objects of great disparities, both at the worldwide level and within each country. This phenomenon, known as the **digital divide**, is one of the challenges directly linked with the development of the Information Society, and indirectly associated with the development of peoples, understanding that development as a growth which should be based fundamentally on knowledge.

To build a knowledge-based society with the common agreement of everyone involved is a complex task which requires following a well-structured model. In this connection Europe is an example of commitment to a knowledge-based society constructed from a **harmonization model** which encourages the participation of men and women in all walks of life.

2.1. The Challenges of the New Millennium

The arrival of the new Millennium is creating new challenges and opportunities for all nations in a moment in which the development of the Information Society permits new levels of interchange and involvement in the international community.

As the **Millennium Declaration**[1], elaborated with the personal backing of the United Nations Secretary General, Kofi Annan, states, the arrival of new models of interrelations, both from the economic as well as the social points of view, has brought evident benefits (more rapid growth, improved standards of living, new opportunities) but at the same time, these benefits are being distributed in an unequal manner. This is thanks principally to the lack of common criteria regarding the establishment and reach of social objectives.

The principal challenges indicated by the United Nations Secretary in the Millennium Declaration are those intended to achieve a world without poverty, a world free of threats and with an assured sustainable future. In concrete terms, the declaration lists eight principal development objectives:

- Eradicate hunger and extreme poverty
- Achieve universal elementary education
- Promote the equality of genders and strengthen the role of women

[1] Published by the Department of Public Information of the United Nations - DPI/2083/Rev.1 – March 2000

- Reduce indices of infant mortality
- Reduce indices of maternal mortality
- Fight against HIV/AIDS, malaria and other illnesses
- Guarantee a sustainable environment
- Foment a world association for development

In all of these challenges Information and Communications Technologies, pillars of the Information Society, play a primary role and should contribute notably to the achievement of the above objectives.

The 2002 World Report on the Development of Telecommunications, *Reinventing Telecommunications*, published by the International Telecommunications Union, indicates how Information and Communication Technologies can contribute to the achievement of more ambitious development goals than those of the Information Society. That is to say, it shows the ways in which the new technologies can be used to achieve the objectives laid out in the Millennium Declaration.

The report cites the following utilities of Information and Communications Technologies, organized according to the global objectives to which they can contribute:

Reduce Poverty

- Increment access to commercial information and reduce costs of transactions in favour of less developed economies
- Foment the capacity of developing countries to participate in the world economy and take advantage of its comparative advantages
- Augment the efficiency, the capacity to compete and access to markets by companies in the developing world

Improve Health Services

- Provide better basic training to health workers
- Facilitate the monitoring of the sick and foment the interchange of information on illnesses and hunger
- Universalise help from specialists and telediagnosis for health workers in rural areas
- Increase public access to basic health information, facilitating the development of content tailored to local circumstances and in national languages.

Sustainable Development

- Improve the efficiency and management of resources while lessening risks for the environment, through teledetection technologies and communications networks
- Report on local strategies for sustainable development and promote the acceptance of these strategies in sectors like agriculture, health, water management, mining, etc.
- Promote greater transparency and supervision of environmental abuses, and foment the applications of regulations favourable to the environment
- Facilitate the interchange of knowledge and communications via networks among regulators, agents and activist groups

Education and Inclusion

- Increase the number of teachers trained, improving their training thanks to ICT, to distance training (e-learning), and knowledge networks which unite teachers with one another

- Augment the availability of quality teaching materials and resources through ICT
- Initiate education and literacy programs, especially those aimed at groups at risk of exclusion, employing appropriate technologies
- Influence public opinion so as to promote equality of the sexes and the inclusion of less-favoured groups, taking advantage of information and communications programs which use ICT
- Improve the efficiency of education ministries and similar organisms, promoting the strategic application of technology and the development of abilities which make ICT possible.

The bridges which the developed world should be able to build in order to span the digital gap are very important in this challenge to use Information and Communications Technology in social and economic development. As we have indicated, new technologies offer an unprecedented opportunity for developing countries to accelerate the first phases of the process, something that will only be possible if we manage to maximise these nations' access to the new information networks.

As a demonstration of the importance of collaboration as a means of bridging the digital gap, the United Nations Secretary General, in the Millennium Declaration, backed an initiative to reduce the differences of Information and Communications Technology resources: a United Nations Information Technology Service, called **UNITeS**.

Another important step taken by the United Nations was the promotion of the incorporation of ICT in their projects via an online volunteer service. Since February of the year 2000, anyone who so desires can share his or her knowledge with developing countries via **Netaid.org.**

2.1.1. Information Society for all

Many revolutions are like trains which pass only one time. Some manage to travel in the leading cars while the most relegated remain at the rear of the train. Others cannot even catch the train and remain behind all the rest. Furthermore, for those who miss the train, it's much more difficult to catch the next one. In the end the distances add up until they are practically irrecoverable. With the revolution which the Information Society is creating there is the risk that this phenomenon might repeat itself.

Information and Communications Technologies have become essential instruments in the battle against poverty, practically **a prerequisite for development**. Through them developing countries have an unprecedented opportunity to achieve much more efficiently development objectives of first necessity, such as the reduction of poverty and the providing of basic health and education services. Countries which are in a position to take advantage of the potential of ICT will reflect, foreseeable, a considerable increase in economic growth and human wellbeing, and will aspire to more robust modes of democratic government and citizen participation.

As UNESCO has indicated in their contribution to the first preparatory meeting for the Information Society World Summit (July 1-5, 2002), the Information Society ought to revolve around the issues of human dignity and social justice, and should adapt itself to the necessities and aspirations of all social groups. The use of Internet and the applications related to Information and Communication Technologies ought to serve to advance democratic principles and to progress in areas such as education, science or culture, integrating new technologies with old.

Extending access to the Information Society and taking the digital era to every citizen, home and school, should be both a local and a global objective, for which it is necessary for governments to provide the means, both at home and abroad. The effort should apply both to the development of the Information Society and economic and social progress wherever necessary. The existence of the digital gap generates others and it is difficult to consider that we can achieve development of the Information Society in countries which are incapable of covering the most basic necessities of their citizens.

Nevertheless, along with basic development, we should build an egalitarian Information Society from the ground up, an IS capable of attending the particular necessities of each citizen who considers technology as an instrument at the service of development.

As has been pointed out in the Bucharest Declaration at the end of the European conference to prepare the Summit, we must foment the vision of an Information Society for all, where people, without discrimination of any type, exercise their rights to freedom of expression, including the right to defender their opinions without impediments and their right to send, receive and transfer information and ideas through any medium, with no frontiers.

To achieve this objective, in constructing the Information Society we should guarantee a wide diffusion of information and an effective participation of all the implicated agents: governments, private sector and civil society. The contribution of each one of them is vital in extending the benefits of the Information Society to everyone. Thus, all regional and global initiatives should be developed under programs designed by governments and regional and international organizations, with the support and participation of both the private sector and civil society.

2.2. Reducing the Digital Divide

Expressed simply, "digital divide" is the term which we use to express the fact that among countries and different groups of people within countries, there exists a great disparity between those who have **real access** to Information and Communication Technologies and those who do not.

Although there is a great variety of ICT, both analogical (for example, analogical radio and television broadcasting, analogical telephone lines...) and digital (for example, GSM mobile communications, DSL lines, communications based on TCP/IP protocols...) we use the adjective “digital” to refer to the gap in terms of access to and use of ICT in general, regardless of the analogical or digital nature of the technologies concerned.

Since the ICT’s are increasingly a pillar in the construction of today’s societies and economies, the digital divide implies that nations which do not have access to information miss a unique opportunity to fulfill their basic development necessities. The excluded groups in developed countries also lose opportunities to progress on all fronts, economic, social and human. The digital divide is a reflection of other social and economic gaps, and it can become a cause of exclusion, adding to other social and economic gaps and causing the disparity to increase.

Nowadays there is a generalised tendency towards growth in the Information Technology gap both between and within countries. In spite of the fact that all countries, even the poorest, have augmented their access and use of ICT, it is the developed countries which have advanced exponentially, thus creating an ever growing gap. Within each nation a similar phenomenon is taking place, with the subsequent growing disparities.

Table I.- Basic ICT indicators in 2001 – Differences among countries

	Internet Users/10.000inhab	Hosts/10.000inhab	PC's/100inhab	Telephone lines/100inhab
Iceland	6794,43	1904,81	41,81	148,41
Norway	5962,90	673,82	50,8	154,57
Denmark	5403,39	1045,38	43,15	145,71
Sweden	5162,74	825,14	56,12	152,94
USA	5014,91	3728,74	62,5	111,79
Spain	1827,45	133,24	16,82	108,64
Tajikistan	5,15	0,48	--	3,62
Ethiopia	3,82	0,01	0,11	0,48
Congo	3,21	0,14	0,39	5,53
Myanmar	2,07	--	0,11	0,64
D.R. Congo	1,14	0,02	--	0,32

Source: ITU, 2002

If we observe Table I, the enormous differences in Internet use and basic infrastructure which exist between northern European countries and those of Africa become clear. The United States, though not the leader in terms of users per 10,000 inhabitants, stands out as one of the principal sources of information in the network, as indicated by the number of Internet hosts per 10,000 inhabitants.

Table II.- Basic ICT Indicators in 2001 - Continents

	Internet Users/10.000inhab	Hosts/10.000inhab	PC's/100inhab	Telephone lines/100inhab
Oceania	2720,49	876,38	39,39	83,5
The Americas	2181,85	1340,96	26,91	62,06
Europe	1840,02	191,43	18,32	84,37
World average	826,1	232,59	8,51	32,96
Asia	434,12	29,23	3,33	20,37
Africa	85,09	3,45	1,06	5,84

Source: ITU, 2002

In Table II we note the lapse suffered by Africa and Asia compared to the world average despite the weight of more advanced countries such as Japan and Korea. In the case of the Americas, the figures reflect the weight of the United States and Canada, as well as the tourist centres of the Caribbean where the Information Society has been imported to provide services to visitors. Nevertheless, as Table III indicates, the figures for the rest of the countries of the Americas are, in most cases, below the world average.

Table III – Basic ICT Indicators in 2001 – Countries of Latin America and the Caribbean

	Internet Users/10.000inhab	Hosts/10.000inhab	PC's/100inhab	Telephone lines/100inhab
Argentina	1050	73	5.1	21.3
Brazil	700	51.5	4.4	18.2
Chile	1150	49.1	8.5	22.1
Mexico	350	56.5	5.1	12.5
Central America and the Caribbean	120	6.8	2.5	10.1
Rest of South America	230	10.6	3.4	11.8
Total	480	37.8	4.3	14.8

Source: "La brecha digital". Fundación Retevisión Auna.2002.

In some rich countries (such as the United States or Finland), some technologies have reached their saturation point, extending through almost all social groups and levels. Though this would seem to narrow the distances, these still remain. Thus, when new technologies appear, the differences reappear between first users, who are able to acquire them with less effort and assimilate them faster, and later adopters of the technologies.

This points up the fact that real access to the Information Society consists in something more than simple access to infrastructures. If people don't know how to utilise the technologies, they are disheartened when it comes to approaching them. If they aren't capable of acknowledging the utility of the technologies or simply cannot afford to pay for them, the infrastructure is of little use to them. As an interesting report published in Bridges.org*, "Spanning the Digital Divide: Understanding and Tackling the Issues"*, points out, apart from providing the infrastructure, admittedly an important factor, in order really to bridge the digital gap, we must keep in mind the following:

- Choose the appropriate technology in accordance with the necessities of the place in which it is going to be installed.
- Provide a technology which is economically feasible for the users
- Provide training in the use of the technology
- Preserve the local social-cultural identity and strengthen the integration of exclusion risk groups
- Foment content in the local language so as to guarantee its utility
- Integrate the technology in the society as just one more element in the usual mix
- Potentiate confidence in the technology by guaranteeing privacy and security
- Create a stable regulatory system which favors the expansion of ICT
- Complement with local development initiatives which contribute to create a propitious economic setting
- Foment the impulse of public administrations, which should lead initiatives designed to fortify the technological development base.

In the following points we outline in detail some aspects of these issues which we consider especially important.

2.2.1. The Era of Digital Bridges

The digital revolution, as we have mentioned already, has generated profound differences in the world in the possession and use of technology. In spite of efforts to establish supportive regulatory regimes, in spite of the growing liberalization of markets, the goal of universal access to the Information Society remains distant for many countries, and the disparity in ICT access continues to grow.

In the year 2000, of the computers connected to Internet, 93% were in high-income countries, whose population represents only 16% of the world total. Thus, in Finland there are more computers connected than in the whole of Latin America and the Caribbean. In New York alone there are more connections than in all of Africa. Or, to cite technologies which have been around for a long time, in Tokyo alone there are more telephones than on the whole of the African continent.

These differences can and should be corrected in an effort to improve all aspects of the economic, social and cultural lives of these countries. Probably there has never been a more propitious time than now for such an attempt.

To appreciate the possibilities which the digital revolution offers to stimulate economic growth and development it is necessary to understand several of its basic characteristics. In the first place, the digital revolution has given rise to a totally new economic sector and, insofar as developed countries dedicate an important part of their economic activity to this sector, they have left open to others a valuable economic space. In this way, although indirectly, the digital revolution contributes to development.

Secondly, the most important capital in the Information Society is human capital, with which the shortage of financial resources in poor countries, which are poorer in this chapter than in human resources, has less negative impact on development. It is evident that to be able to take this "shortcut" to development we must foment the creation of intellectual capital through education.

Thirdly, the Information Society constitutes a means of improving and transforming many activities: from commerce, through public services, health and education, up to generally all sectors of social and economic activity.

In any case, the transition won't be easy for developing countries, since they already face a social and economic gap which limits resources and formation possibilities. The digital bridges can only be built if there is a solid foundation capable of offsetting the lack of infrastructure and the presence of illiteracy and which guarantees the protection of cultural identity and language, as well as the quality and relevance of the contents and services which are offered.

In this task of building bridges, civil society and the private sector will play a fundamental role in integration, not without problems, especially in legislative and normative frameworks which make investment and collaboration difficult. We might say that the globalizing context in which we find ourselves, a generous and rational development cooperation is absolutely necessary (though not sufficient) to achieve significant advances in the construction of the Information Society in the desired terms of justice, equality and inclusion.

From the Spanish point of view, the ties which unite us with Iberoamerica are strong and, based on our own development experience. We should collaborate as a part of this community in the development of an Information Society which fortifies the ties which unite us and

potentiates common cultural assets including, of course, our valuable language, while at the same time preserving our diversity.

2.2.2. The Pillars of the Bridge: Formation and Infrastructure

It is formation and infrastructure which form the solid base for building digital bridges.

Education is a fundamental right of all human beings, the defense and promotion of which is essential in achieving any development objective. It is in reality an indispensable pillar for any development process, not only for the Information Society.

As regards the digital gap, formation can make three very important contributions in successive phases:

- In the first place, generalised basic formation, which is one of the objectives of the Millennium Declaration, should help to raise levels of literacy and prevent "functional illiteracy," which is what prevents the comprehension and utilisation of normal means of day-to-day communication and information.
- In second place, it is necessary to introduce programs of basic formation in ICT which permit the population to participate actively and understand the Information Society, so as they can obtain the benefits which it offers them.
- Lastly, it is possible to integrate the ICT's in processes of formation, to improve educational quality and share knowledge and information, reaching excluded groups, improving the quality of contents, generating alternate teaching mechanisms and providing a richer formation for teachers.

Effective formation for the development of the Information Society is that which permits people to discover the possibilities of the ICT's so as to take advantage of all their potential and integrate it into their lives. Insofar as we are able to reach groups which are outside the circle of educational and labour entities, either because they have surpassed these cycles or because the were never included in them, we will be more successful in reducing the digital gap.

Since **Infrastructure** is one of the decisive aspects in access to technology, any effort which contributes to construct a bigger and better infrastructure inevitably contributes to the development of the Information Society.

There is an ample variety of available technologies and, in many cases, the PC/Internet solution is not the best one to satisfy daily necessities in developing countries. We, both users and the public administration, must identify what type of technologies are the most appropriate for achieving given objectives. The private sector, for its part, should consider the developing countries as market niches where people's necessities are very different. Therefore the products which they should develop in order to cover these necessities must be tailored specially for them. The collaborative action of the public and private sectors is fundamental to improve infrastructure development.

Another important factor to keep in mind is accessibility in terms of cost. It is not only a question of emplacing the means and the technology, rather one of offering a service which is affordable for those who need to use it.

2.2.3. Protection of Linguistic and Cultural Diversity

The protection of linguistic and cultural diversity is not only necessary to preserve the identities and patrimonies of developing countries in the Information Society. It also plays an important role in the diffusion and extension at local level, an essential step when it comes to narrowing distances.

The preservation of local identity does not mean wall building or enclosing people in their local reserve. Quite the contrary, it means a total opening up to worldwide interchange in conditions of equality and respect. Insofar as we can guarantee that the nations which embrace the Information Society can do so in an atmosphere of free cultural expression without being coerced, and can, in turn, discover other cultures in similar conditions, the development possibilities will increase on all sides.

The protection of linguistic diversity assumes special importance in places where information and communication in the local language is already scarce. The opening of a world of extraordinary but unintelligible content would satisfy only a few privileged individuals, leaving at the margin the necessities of a large majority. Furthermore, it would possibly discourage people from utilizing these new channels. It is for this reason that the generation of local content is so important: on the one hand because it can best meet the needs of local users, on the other because it contributes to the diffusion of local information and knowledge, animates the use of new technologies and strengthens the cultural presence of the community in the rest of the world.

By the same token, it is important to note that an important percentage of the world's population does not know how to read or write. For them there are other routes for receiving the Information Society, notably radio, telephones and television. In these media it is also necessary to guarantee respect for cultural variety and linguistic diversity, empowering both as doors to the rest of the Information and Communications technologies.

2.3. Towards a Knowledge-Based Europe

One of the objectives of the European Union, since the first halting steps of the Information Society, has been that the businesses, governments and citizens of Europe play a leading role in the development of the knowledge/information society and participate actively in it. To reach this objective in which there are so many agents involved has only been possible through **a harmonization model among member countries of the Union** in which balanced solutions have been sought for all countries.

The measures which have been proposed to support this ambitious objective are the following:

- foment research designed to disseminate new information and communications technologies,
- establish and maintain a regulatory and normative framework which encourages competition, and

- favour the development of applications, content and support initiatives which prepare and stimulate all European citizens to take advantage of the Information Society

These measures put the emphasis on the two most important political aspects of European Union strategy on the Information Society: the promotion of research and the development of a regulatory framework. Both initiatives were begun in the mid 1980's.

The first research and development activities in the ICT field took place in 1984 in the framework of the ESPRIT Program (information technologies), which was followed in 1986 by programs of specialized telematic applications (transport, health and distance learning) and the RACE Program (advanced telecommunications technologies).

The IST Program (Information Society Technologies)

The IST Program of information society technologies, which includes all ICT research activity within the European Union, is the second pillar of European policies for the construction of the Information Society. Its objective is to contribute to the development of simple-to-use technologies and applications in all areas covered by the policies of eEurope: security and the protection of privacy; education and training; access possibilities for the infirm, older and handicapped people; e-commerce; electronic government; online health care; intelligent transport; etc.

The objectives of the IST program for the coming years are directed at assuring European leadership in technologies which act upon the knowledge society. In this way the program is intended to increase innovation and competitiveness in the European productive fibre and to leverage the benefits for European citizens.

The IST program focuses on new generation technologies, through which both IT and the networks of daily life can be integrated, permitting access to a multitude of services and applications via simple interfaces. The concept of an "intelligent setting" places the user, the citizen, in the centre of future developments leading to an inclusive information society for everyone.

This research effort will reinforce and complement the objectives of the eEurope 2005 plan, and will try to go even further, bringing information and communications technologies to each and every European home, school and business.

Telecommunications Policies

The telecommunications policy was initiated in 1987 by means of a Green Book on the liberalisation of the sector. The three principal objectives laid out then, which are still valid today, were:

- liberalise the market segments subject to monopoly
- harmonise the European telecommunications sector through common norms and rules
- apply vigorous competition norms to the liberalised segments of the market in order to prevent concerted agreements and the creation and abuse of dominant positions

The research done since then has permitted the development of new products, services and applications. The liberalisation of the telecommunications market has been and remains fundamental for the large-scale diffusion and assimilation of those new products, services and applications. A good example of the interaction between ICT research and telecommunications regulation is the case of digital mobile communications. European mobile telephony utilises

GSM technology. The technical specifications, validation and experimentation with this technology were all developed within the European Union. The GSM system was rolled out at the beginning of the 1990's as the pan European mobile communications protocol. As a consequence, in 1996, the European mobile communications market was liberalised. Thanks to that combination of a high quality norm and full competition, the assimilation of the GSM system was very rapid: midway through the year 2001 there were almost 260 million GSM users in the European Union. After this success in Europe, the system was adopted as the world standard and is used today in another 130 countries.

In 2001 the European Commission approved the so-called telecommunications "package," a series of measures which embraces, among other issues, regulatory provisions such as the Framework Directive, the Universal Service Directive, the Interconnection Directive and the Licenses Directive.

Policies of the Information Society

In 1994 a coherent global policy on the information society was launched, supported by the White Book published by the Commission in 1993 on "Growth, Competition and Employment." That White Book emphasised the fundamental importance of the Information Society for economic growth, competition, job creation and an enhanced quality of life for all Europeans in the future. As part of the follow up of the White Book a high-level group on the subject of the information society elaborated a report entitled "Europe and the World Information Society."

In that report they made recommendations regarding the manner in which the Union could contribute to the establishment of a regulatory, technological and social framework favourable to the development of the Information Society. This laid the foundations for the adoption in June 1994 of the first European action plan for the information society, "Europe on the Road to the Information Society." The principal objectives of that action plan were those of accelerating the complete liberalisation of telecommunications services and infrastructures, which took place in 1998, and the consolidation and reorientation of ICT research programs. Subsequently this new dimension of the Information Society was incorporated into all pertinent European Community policies. In 1996 a revised version of the plan was adopted.

In 1999, despite the success of the initial phase, it became clear that European Union policy on the Information Society needed fresh impulse and new perspectives in order to adapt itself to the fast evolving context. In that moment the Information Society was no longer just an idea, but had become a palpable reality, as was demonstrated by the Internet boom and the emerging E-economy. It was also necessary to coordinate more closely the information policies of member states.

For that reason, in December of 1999 the "eEurope: An Information Society for All" program was enacted. The eEurope initiative enjoyed a favourable reception from the European Council which, in March of 2000 in Lisbon traced the Union's new strategic objective for the following decade: "convert the European knowledge-based economy in the most competitive and dynamic in the world." In order to achieve this goal, the European Council asked the Commission to elaborate a plan of action (eEurope), which the Council adopted in June of 2002 at the Feira Summit. The eEurope plan of action of 2002 laid out a series of key goals which member states should have achieved by the end of 2002. The application of the action plan was based on the comparative evaluation of each nation's results in the achievement of the eEurope objectives.

2.3.1. Europe and the Information Society

The eEurope Initiative

Although Europe prefers not to identify the Information Society totally with Internet, it is true that Internet has been a powerful motor for the Information Society. For that reason, the European Commission designed the eEurope 2002 action plan, designed first and foremost to stimulate and increase Internet use, with the following principal objectives:

- That all European men and women might enter into the digital era and be connected to the web of webs
- Create in Europe an entrepreneurial culture and spirit open to digital culture
- Guarantee that the process not contribute to the creation of social exclusion, rather that it gain the confidence of consumers and reinforce social cohesion

To achieve the eEurope 2002 goals it was considered necessary to:

- Accelerate the creation of an adequate legislative framework
- Support new infrastructures and services in all of Europe. The evolution in this field depended principally on financing from the private sector.
- Apply the open method of coordination and comparative evaluation (benchmarking), to assure that actions were carried out efficiently, achieved the desired effect, and had the necessary specific gravity in all member states.

The eEurope 2002 initiative covers ten priority areas:

- **Education:** to introduce Internet and multimedia instruments in the schools and to adapt the education system to the digital era
- **Internet access:** to establish an optimum infrastructure (network layout) and achieve a significant reduction in Internet access tariffs, approaching the lowest in the world, by means of greater competition in the Internet market and facilitating comparative evaluation at national and European levels
- **E-commerce:** implant email and the application of the associated legal frameworks, as well as the extension of the use of electronic public contracting
- **Research Networks:** to achieve for these networks accelerated Internet access and facilitate cooperation both in work and training
- **Intelligent Cards:** in order to provide secure access to Internet and facilitate the establishment of a Europe-wide infrastructure universally available to citizens
- **Risk Capital**: to develop innovative approaches capable of maximising access to risk capital by technology-related small and medium sized businesses
- **Electronic Participation**: to develop policies aimed at obviating exclusion in the digital world, in such a way that the entire citizenry can access public websites and their contents. Emphasis was placed, as well, on the necessity to guarantee access to affordable Internet access technologies
- **Online Health Services:** to foment the use of networks and intelligent technologies in the fields of medical attention and control
- **Intelligent Transport**: to achieve more secure and efficient transport services through the use of digital technologies
- **Online Public Administration:** to facilitate citizen access to information, services and decision making procedures of the public administration

By the same token, it is considered necessary to take into consideration:

- special measures for the elderly and citizens with specific needs;
- the repercussion of the ICT's in production processes and the potential increase in teleworking
- measures designed to resolve the shortage of ICT specialists
- measures to promote mobile Internet access
- promotion of norms which facilitate the use of technology

During the Spanish presidency of the European Union, in the first semester of 2002, the necessity to design the next phase for the fulfilment of the objective laid down in Lisbon was noted. The design of this second phase was reflected in the eEurope 2005 action plan and enjoyed the backing of European heads of state and government in the Seville Summit of June 2002.

While in the eEurope 2002 plan special emphasis was placed on the question of Internet access, priorities are centred today on the necessity to count on appropriate and attractive services for citizens, based on an adequate broadband infrastructure with a multiplatform access. The citizen is in the centre of the eEurope plan of action. In order to achieve a greater level of inclusion it is considered necessary to exploit the possibility of providing information society services by other, non-PC means such as digital television and third-generation mobile communications. These other platforms can complement access via PC, and with these combined access possibilities it will be easier to guarantee that a larger proportion of the population can access Information Society services for their interest and benefit.

The new initiatives included in the eEurope 2005 action plan are built on the solid base of the work done by eEurope 2002, maintaining eEurope as the banner of European policy for the development of the Information Society.

They have already chalked up important achievements. For example, Internet penetration and access in European homes has been duplicated, while at the same time seeing a general reduction in the tariffs of network operators. Nevertheless, with eEurope 2005 we continue to seek new improvements and wider development.

The new plan aims to create a favourable atmosphere for private investment and the creation of new jobs, foment productivity, modernise public services and training and publicise the benefits of new information and communications technologies for the whole society.

This new plan foresees that, by the year 2005, Europe can count on the following resources:

- modern online public services: specifically, an administration (e-government), electronic training (e-learning services) and electronic health services (e-health services).
- a dynamic framework for e-commerce: in order to promote the creation of electronic business, and with the object of increasing the competitiveness of European businesses and leveraging productivity and growth, by means of investments in information and communications technology, human resources (in particular digital training) and new business models, while respecting citizen privacy
- universal broadband access at competitive prices: to guarantee the availability and general use of broadband networks
- a secure information infrastructure: to construct a "security culture" in the design and implementation of information and communications products

The actions which will be carried out to achieve these objectives are:

- **Broadband Connection:** The member states are urged to emplace broadband connections for all public administrations before the end of 2005.
- **Interoperability:** Before the end of 2003, the Commission will make public a joint interoperability framework in order to facilitate pan-European electronic administration services both to citizens and businesses.
- **Interactive Public Services:** Before the end of 2004, member states should have guaranteed that the basic public services be interactive, where feasible. These services should be accessible to everyone and take advantage both of broadband networks and multiplatform access.
- **Public Contracting:** Before the end of 2005, member states should carry out a significant part of public contracting by electronic means a significant part of public contracting.
- **Public Internet Access Points (PIAP):** All citizens should have easy access to PIAP in their towns, preferably with broadband connections.
- **Culture and Tourism:** The Commission, in cooperation with member states, the private sector and regional authorities, will define a set of electronic services for promoting Europe and offering ease of use for obtaining public information.
- **Broadband Connections:** Before the end of 2005, member states should assure that all schools and universities have broadband Internet access for both teaching and research purposes.
- **e-learning Program:** Before the end of 2002, the Commission has the intention of adopting a proposal for a specific eLearning program, which will be centred on the achievement of the objectives of the eLearning action plan from an educational perspective. The program will be active from 2004 to 2006.
- **Virtual Campuses for All Students:** Before the end of 2005, member states with the support of eLearning and eTEN18 programs, should guarantee that all universities offer students and researchers a level of online access to maximise the quality and efficiency of the process and activities of learning.
- **Cooperative, Computer-Assisted System for Universities and Research:** Before the end of 2003, the Commission will initiate pilot actions and research which will permit the installation of networks and computer-assisted platforms in all of Europe, based on high-yield IT infrastructures and GRID19 technologies.
- **Retraining for the Knowledge Society:** Before the end of 2003, member states, using structural funds where necessary and with the support of the Commission, should undertake actions aimed at providing adults (e.g. the unemployed, women returning to the labour market, etc.) with the training which the knowledge society requires, in order to improve their job possibilities and quality of life in general.
- **Electronic Health Cards:** Based on the agreement reached by the European Council in Barcelona, according to which paper forms required to receive health care in another member state will be substituted for a European insurance card, the Commission will present a proposal before the Council of spring 2003.
- **Health Information Networks:** Before the end of 2005, member states should develop health information networks which cover the different healthcare points (hospitals, laboratories and homes), with broadband connectivity where necessary.
- **Online Health Services:** Before the end of 2005, the Commission and member states will guarantee online health services for citizens (e.g. healthy life and disease prevention, electronic health histories, teleconsulting or electronic reimbursement).
- **Legislation:** The objective will be to extend the current normative, which favours E-commerce, to the offline world so as to assure equality of conditions for both online and offline commerce.
- **Small and Medium-Sized Businesses:** Before the end of 2003, the Commission intends to establish a European support network for electronic businesses. This network will unite

European, national and regional agents of the sector in order to reinforce and coordinate actions designed to support the online initiatives of Small and Medium-Sized Businesses.

- **Digital Training:** Before the end of 2003, the Commission, in close cooperation with member states, will publish an analysis of the supply and demand of digital training in Europe.
- **Interoperability:** Before the end of 2003, the private sector, supported by the Commission and member states, should have developed interoperable solutions in the field of electronic business, including transactions, security, signatures, purchases and payment.
- **Confidence:** Before the end of 2003, the Commission, along with the private sector, consumer organizations and member states, will examine the possibility of establishing a Europe-wide system of online resolution of litigation.
- **«business.eu»:** Before the end of 2003, the Commission will examine the possibility of offering European businesses additional functions related to the ".eu" domain, such as a trustworthy cyber-identity and other support operations, for example, confidence branding and an authentication plan.
- **Cybersecurity Operative Group (COG):** Halfway through 2003, COG should be operative. Based on a proposal which the Commission presented in 2002, the Council and Parliament will be able to adopt the necessary legal bases as quickly as possible, keeping in mind that the subject of network and information security affects not only one pillar of the European E-commerce edifice.
- **«Security Culture».** Before the end of 2005, a "security culture" should be consolidated for the design and implementation of information and communications products. The private sector should elaborate best practices and norms and foment their systematic application.
- **Spectrum Policy:** The Commission will utilise the new regulation framework for the radioelectric spectrum to guarantee that wireless broadband services (e.g. W-LAN) can count on sufficient spectrum and that they use it efficiently, as well as cooperating with member states in the introduction of these services.
- **Broadband Access in Less-Favoured Regions:** Member states, in cooperation with the Commission, should back in cases of necessity the implantation of broadband services in less-favoured areas, using where possible structural funds and/or financial incentives (within the existing competition norms).
- **Combat the Obstacles to the Implantation of Broadband:** Member states should facilitate rights of passage, posts and conduits necessary to facilitate investment, for example, by eliminating legislative obstacles. The Commission will back this action by fomenting and organising the interchange of local and regional experiences and public/private associations.
- **Multiplataform Content:** The public authorities of member states and the private sector should make an effort to offer their content on different technological platforms, such as digital interactive television, 3G, etc. The Commission intends to back demonstration and research projects, and will identify the regulatory obstacles which oppose the use of digital television for providing "35" interactive services.
- **Change in Digital Technology:** In order to accelerate the transition to digital television, member states should create transparency regarding the conditions which will obtain in the proposed changeover.

To sum up, eEurope consists of two sets of actions which reinforce one another mutually (services, applications and content on the one hand and security and broadband infrastructure on the other). Clear objectives have been traced, as well as a comparative progress evaluation procedure and a coordination and acceleration of the adoption of new legal norms and the reorientation of existing programs relating to these priorities. Furthermore, more emphasis will be given in the determination and encouragement of best practices in global coordination.

Both eEurope 2002, and the new eEurope 2005 plan are accompanied by a set of indicators to measure the degree of progress which this initiative is achieving. It is intended, through the comparison of the states of each indicator in the different countries of the EU, to identify successful cases and quantify the general evolution. On the other hand, eEurope 2005 is going to reinforce the idea of sharing best practices among countries, as well as the lessons learned in outside experiences.

The eEurope initiative, now extended until 2005, has been determinant in giving the Information Society a new political impulse at the highest level. In this favourable political context, the eEurope plan of action is fundamental in order that all European citizens and businesses, especially the small and medium-sized ones, can access the benefits of the Information Society.

2.3.2. International Aspects of European Policy

Faced with the new challenges of globalisation, the European Union has fixed the objective of identifying the sectors related with the Information Society which require greater international coordination, so as to achieve greater development of the "world information society." Basically, the E.U. wants to facilitate greater harmonization in the international forum on procedures related to the future development of the Information Society.

The European Union needs to carry out a detailed examination of the problems and priorities presented by the development of the Information Society, so as the international community can deal with them profoundly and in a coordinated manner. Since the definition and the resolution of problems is simpler when channels of information interchange exist (round tables of member state experts, forums, etc.) the EU has decided to support these activities, through which all agents involved will have the opportunity to present their points of view and interchange information. It is not only important to debate these problems, but also to present the resulting opinions and conclusions to the political powers that be worldwide. With this in mind, the European Union has tried to take advantage of international events already programmed at ministerial level.

In general, the challenge for the EU is to provide the correct combination of policies for each region and country. The great diversity of policies which the EU has available offers them a unique opportunity to apply an efficient combination of instruments of cooperation, including support for development.

All of Europe's accumulated experience in the question of the Information Society; both in coordinated form, whose maximum exponent is the eEurope initiative; and in the case of each national strategy; can be interesting for other regions of the world. The European attitude in this respect, expressed in various international forums, is to share their experience and learn from that of others.

2.4 Spain and the Information Society

The generalization of ICT and the globalisation phenomenon have given rise to a new model of society, one which obliges us to accelerate the implantation of the information society. This model requires public administrations to create long-term programs designed to guarantee the participation of the entire society.

As we have seen in the previous section, the Spanish Government, through the INFO XXI plan for the relaunching of the eEurope initiative during the recent Spanish presidency of the Council of the European Union, has promoted this implantation in different environments, such as public administration, education and culture, the business world and, by extension, the whole of Spanish society.

We must emphasize that there are notable successes in the public efforts to implant the knowledge society in Spain. For example:

- → Tributary Agency – World leading project for the paying of taxes online
- → Census Management Via Internet: Spain is the first country in the world which permits citizens to carry out the entire process via Internet.
- → Notable development of online services for VAT payment and Social Security transactions
- → The National Factory of Stamps and Currency has developed a complete system of electronic certification.

Spain finds itself at a global disadvantage in Europe and the OCDE in terms of the development of the information society. This position does not correspond to their economic situation, nor to their indices of convergence with the other European economies, all of this in spite of considerable efforts.

The development of the information society has been one of the priority objectives of the Spanish government for two fundamental reasons:

- → It represents an important alternative in overcoming the social inequalities which have generated the traditional physical barriers to information access.
- → The new technologies already play a key role in the competitiveness of businesses. This fact is reflected in increased productivity and the efficient use of resources, and is a factor in economic growth, employment and social wellbeing.

At the end of 2002 a commission of experts was formed to analyze the problems which this development was bringing about. Based on the conclusions of this commission and of the accumulated experience of current programs for the promotion of the information society, the government has elaborated the Program for Measures for the Development of the Information Society in Spain (2004 - 2005) - “España.es”.

España.es

This program represents the government’s determination to adopt a set of coherent and integrated initiatives to situate our country in line with the most advanced in the world. It contains measures aimed at public administration, citizens in general and, especially, our small and medium-sized companies, insofar as these suffer an important deficit in the use of new technologies in their productive processes. This fact points up an important comparative deficiency with respect to our economic partners.

The program contemplates different perspectives for closing the divide: actions in **different temporal horizons** with results in the short, medium and long terms; **actions of a horizontal or general character** in the face of actions in given sectors, such as small and medium-sized companies or the public administration; and **specific actions**, which contemplate both measures for direct investment in infrastructures, content or services, and normative, legal,

fiscal or other types of measures which, though they do not imply investment, are also very necessary.

The guidelines of the action program are the following:

- → To foment **quality content and services** in affordable conditions which favor demand
- → To improve **accesability**, enlarging the network of public Internet access points for all citizens and developing actions designed to "connect" small companies to the information society.
- → To stimulate demand through the **education** of our young people, the **training** of citizens, workers and business people and the **dissemination** of the advantages offered by the information society.

These three major objectives are approached via **six action areas** which make up the Action Program, the first three of a vertical nature, affecting concrete sectors; and three of a horizontal character, directed to the society in general.

1. Administración.es

The object of this action area is to promote electronic administration as a model and motor for the use of online services on the part of citizens. This initiative, reflected in the *Urgent Plan for the Promotion of Electronic Administration in Spain,* adopted by the Ministry of Public Administration last May, has attention to citizens and businesses as its central focus . The most relevant concrete measures in this connection are:

- → To accelerate the development of the electronic National Identity Document (e-DNI), so as to provide all Spanish citizens with an instrument of identification for online transactions, analogous to the traditional National Identity Document in the physical world.
- → The promotion of the development of basic electronic public services, following the guidelines laid down eEurope 2005.
- → A new impulse for the Citizens' Portal, the web portal of services of the Spanish public administration.
- → To migrate progressively the internal and external communications of the public administrations towards electronic channels
- → The promotion of the web portal for public employees
- → The substitution of paper certificates for telematic certificates and for the transmission of data among organisms
- → The development of computer tools and applications conceived especially to satisfy the needs of small and medium-sized municipalities, both in their internal management and their relations with citizens

Specific actions will also be taken in the health sector. The enhancement of the use of ICT in the health services will permit an improvement in quality of services in the health system, one of the public services which has greatest interest and utility for citizens.

2. Educación.es

This action area has the objective of promoting the use of ICT in education, modelling and promoting the new information society through the training and qualification of our new generations. This action should change the educational paradigm current in recent years, permitting the transition from today's "computer classroom" to the computer in the classroom, thus favoring the integration ICT throughout the entire learning process.

The actions included in this area are based on initiatives already under way in the "Internet in School" program, the object of which is to guarantee the equipping of all Spanish education centres with computers, local area networks and broadband connectivity. The new initiatives contemplated by España.es are centered on offering our teachers training, services, educational content, infrastructures and the necessary equipment to take this integration to

each and every classroom. Among other scheduled measures is that of equipping high-school teachers with wireless networks and laptop computers.

Also contemplated is the development of applications and content for the educational system and the creation of virtual communities in schools where all agents of the system can be integrated: parents, teachers, students, etc.

3. Pyme.es

The improvement of competitiveness of the Spanish economy depends necessarily on the intensive use of new technologies in the productive processes of businesses and the promotion of research and innovation. Given the importance in the productive fabric and the creative capacity of Spanish small and medium-sized companies, this action pursues the integration of ICT in these companies.

The coordinated action of different administrations, with the support of business associations and companies which supply technological services and solutions will include a range of measures from the computerization of small companies' internal processes to the integration of technology in their relations with other agents (public administrations and other businesses.) This impulse will be accompanied by the development of specific applications, services and content for different productive sectors, as well as programs of training and advice for the dissemination of the advantages of these solutions.

4. Navega.es

The object of this action area of a horizontal character is to promote the training of all citizens in the technologies of the information society and facilitate the inclusion of citizens who, for their geographical or income situations, do not have broadband access to Internet

This area integrates two basic approaches. The first of these is the enlargement and extension of the network of free public broadband access to Internet, thus completing the deployment of centres already under way in the "Rural Internet" and "Internet in Libraries" programs. The Rural Internet program entails the implantation of public broadband Internet access points in small villages, making use of satellite technology. In this way quality services can be provided without the necessity of DSL or other cable-based services, which normally do not reach rural areas.

The second approach is an ambitious training program for citizens and specific groups, which is oriented towards demonstrating the practical advantages of Internet and of the new services. This program relies on collaboration among the different administrations and interaction with private initiative.

Within these actions are included a series of specific measures aimed at guaranteeing access to the disabled and other persons with special needs.

5. Contenidos.es

This action area includes support measures for the creation of quality digital content and the encouragement of network security, both as elements which incentivate the use of Internet.

As part of the first type of measures, España.es contemplates the creation of the Patrimonio.es. This program has as its object the digitalization and dissemination over Internet of Spain's historic, artistic and natural patrimony. This will contribute to the Spanish cultural presence on the Web and facilitate the creation of educational content, while serving to foment cultural tourism by offering a virtual taste of Spain's rich cultural offering on the Web. At the same time, this content is valuable for the academic and research communities.

The other line of pursuit, the Seguridad.es program, is designed to reinforce citizen confidence in the use of Internet and e-commerce, including measures such as the enhancement of the virus-alert center or the program of content development especially for infants and young

people, as well as collaboration in the rollout of the electronic National Identity Document (e-DNI.)

6. Comunicación.es

This action area contemplates a communications campaign designed to create enthusiasm in Spanish society for the objectives of the program. It also contributes to mobilize resources and foment the participation of public and private institutions in different actions. The campaign addresses the necessity to promote a cultural and attitude change regarding the new technologies, thereby bringing the information society closer to people.

España.es: Complimentary Approaches

Included in the philosophy of the six key areas described above, is the determination to complement concrete actions with the necessary legal measures to put the Internet world on the same level as the physical world, adapting legislation to the possibilities offered by the new technologies. This means, without a doubt, a stimulus for the demand for new services.

Another common feature of the six key areas of España.es is that of giving priority to the sectors of the population (both citizens and business) with greater necessity where the greatest potential impact is foreseen. This will be achieved through the creation of agile structures and with sufficient resources (e.g. foundations, business management structures.)

These various actions count on key actors to permit them to reach the target sectors. These key actors or opinion leaders ("*prescriptores*") are destined to exercise a tremendous influence in their respective environments in the effective implantation of the information society. This means the teachers in the educational area, the business associations and the big companies with the capacity to mobilize smaller companies, or certain social agents in the case of digital training for young people and adults.

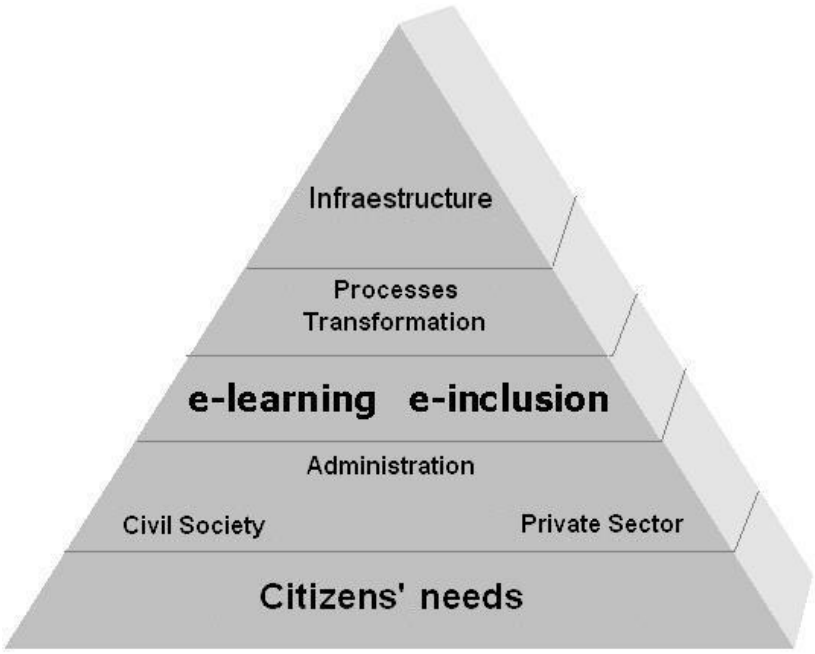
We must point out the importance of adequately situating this program in relation to the National Plan for Scientific Research, Development and Technological Innovation (I+D+i). The implantation of the information society is intimately linked to the policies of research and technological innovation, and the ICT sector is one of those which dedicates most effort to research and development. The actions in this environment are concentrated through the National Program of Technologies for Information Society Services. The objective of this program is that citizens, the productive system and the society in general might benefit from the advantages offered by innovative technologies.

3. The Debate

3. The Debate

3.1. Structure for the Development of the Information Society

In order to organise the structure of this book, to establish an adequate basis for the analysis of the development of the Information Society, and to be able to establish a debate as to its contribution to human development, we have prepared a structural model in a pyramidal form:



Graph 1. Structure of the development of the Information Society

Each one of the steps on this pyramid is going to be an object of reflection and debate, dealing with the specific subjects shown in Graph 1. Nevertheless, this reflection will not lose sight of the objective of obtaining an integrated model and a set of coherent ideas. Each one of the steps will be observed under the common prism of the development of the Information Society and of the utilisation of development technologies in the widest sense.

At the base of this pyramid we have placed the **citizens' needs**, whose satisfaction, beginning with the most basic necessities, should be the primary objective of any initiative for the development of the Information Society. As we have already pointed out in the discussion of the context in which this development should take place, the incorporation of new technologies, new processes and relational modes, intrinsic to the implantation of the Information Society, can and should be at the service of economic, social and human development objectives, starting by contributing to the achievement of the most basic goals.

On the following step up the pyramid we have placed the agents which should drive the processes of transformation towards this new model of society: **civil society, the private**

sector and public administration. Specifically we will discuss the role which civil society plays in cooperation for development and the answer which this third sector (certainly different from the public and mercantile sectors) offers to the diverse facets of change and transformation. By the same token, we will consider the function of the public sector in cooperating with development, and the social commitment of businesses and their role as technological partners of the public administrations. With respect to these latter, we will mention the functions which are of vital importance for the development of the Information Society, and which fall under their responsibility: regulation, the provision of content and services for the citizenry, leadership and promotion of the utilization of new technologies, etc. We will place particular emphasis in this section on the leadership which the public administration should assume en the fields of e-inclusion and the struggle to close the digital divide.

In third place, we must touch upon the lines which are considered most relevant for the development of the Information Society: **e-inclusion and e-learning**. The subject of e-inclusion straddles a whole set of questions, some of which have to do with access to the Information Society and other with specific content and services for groups at risk of exclusion. Thus, this part centres on proposing, on the one hand, actions which can facilitate generalised and affordable access to the Information Society (to a certain degree this refers to infrastructure) and, on the other, actions for basic training for sectors of the society at greatest risk of exclusion, as well as cooperation strategies and development in this field. As for e-learning, as an element of our pyramid, it covers both basic training in ICT and training via ICT. Both types of training have an impact, not only on the development of the Information Society, for which they are of capital importance in qualification and dissemination, but economic and social development in general. In this section we will insist upon the methodologies of e-learning, the pedagogic treatment of content in its digital versions and in the interaction among students and between students and teachers as part of the formation process.

On the upper steps of the pyramid we find **process transformation** and **infrastructure**. With respect to process transformation, we consider the possible alternatives which developing countries have in adapting the processes of more advanced countries, since the changes which are produced require different kinds of local management, capable of finding solutions within their special circumstances. Lastly, we discuss the question of infrastructure, from the physical point of view, as a necessary element in completing the development pyramid of the Information Society. In this section we insist upon the necessity of finding better solutions for providing access and means for its use, as a function of the level of development and availability of technology, as well as establishing a stable regulatory framework which favours investment and infrastructure maintenance.

The material which has been used to form this pyramid was provided by people with experience in the world of the Information Society and Development. Their collaboration, their reflections regarding each one of these subjects, and the examples which they have provided, offer a valuable opportunity to contrast how, from the different agents and forces which intervene in the development of the Information Society, we can meet the challenge of constructing an Information Society for everyone, an IS which in turn serves as an instrument for development.

The articles of the experts are indicated in the text by this icon: 

Within some of the reports we have included examples which illustrate the reflection, differentiated by lighter letters and narrower margins.

The examples are differentiated with this icon: 

The debate regarding the development of the Information Society and its role in the cooperation among and growth of nations in a wide sense can be summed up with a simple demand: Information for Everyone. With this title, professor Federico Mayor Zaragoza opens some reflections which later participants in this book will try to answer from their different points of view.

Information for All

(Professor Federico Mayor Zaragoza,
President of the Foundation for a Culture of Peace[2])

[…] The challenge is to convert "distance" education into the instrument of an education without distance, democratic and adapted to each person, available everywhere, without exclusions.
[…] Today we live in a world of "inforoutes" and "infocaverns". How can we integrate people who live at the margins of the information superhighways?
[…] Coexistence and intercultural dialogue, as well as the free circulation of information and knowledge, will be the best policies, in the face of technological globalisation, to protect identities and cultural diversities in a democratic setting on the national and global scales.

The twentieth century left us great contrasts. Against the backdrop of the acceleration of scientific development and great advances in the areas of communications and technology, we find poverty, exclusion and the helplessness of so many human beings. The twentieth century has been the most civilised and the most barbarous, the most brilliant and the darkest in history. Let us enter into the twenty-first century among lights and shadows which oblige us to meditate and imagine. Are we prepared for the twenty-first century? Philosophical reflection and scientific knowledge have conducted us from a world of certainties to an ocean of doubts and uncertainties.

The third industrial revolution, based on the information era and new technologies in all aspects of human life, is changing the world and making it more global. What are the consequences which the social fabric undergoes thanks to this IT revolution which "converts each one of us into the stationary motor of an infinity of virtual voyages?"

The impunity, on the international scale and, thereby, the lack of stability and security; the transference of public responsibilities from elected representatives to "the market;" nationalist and religious extremism; ethnic fanaticism and the rejection of things "different" have seen a lamentable reactivation in recent decades. As a reply to them we find the infirmity of our time: indifference. The failure to keep the promises made by the most prosperous countries to the poorest is one of the principal roots of this situation. How can we return humanity its passion, its love, its sentiments and its sense of human life? We must change course before it's too late.

A phantom ranges the world: The dissociated society, far from strengthening planetary coexistence - "We the people" – and the synergetic convergence of nations, has submitted the world to a fractal logic. The traditional groups of social cohesion: the family, the State, the school, the workplace and the institutions have got weak.

Luckily globalisation is not limited to computers, telecommunications, financial markets, fiscal paradises and sinister traffics beyond all laws and codes of conduct, because it is not only virtual. Globalisation also generates a strong sentiment of belonging and common dependence.

[2] With the Foundation for a Culture of Peace, founded in Madrid in March 2000 under the auspices of the Education Council of the Community of Madrid, Professor Mayor continues the work begun as Director General of UNESCO to promote in all aspects of human endeavour, the passage from a culture of violence to one of peace and tolerance. The Foundation celebrates each year a Course on the Culture of Peace—educational content, origin of conflicts, democracy, human rights—in collaboration with Madrid's Rey Juan Carlos University. In December of 2000 the Foundation organized an International Meeting, attended by renowned personalities who have distinguished themselves in the fight for justice, liberty and peace. At the end of the meeting the delegates unanimously promulgated the Madrid Declaration.

For this reason, the globalisation of events evokes the globalisation of wills, illustrated by the rise of civil society and the international solidarity movements. This has given rise to a new actor in the twenty-first century, which is civil society organized in networks of expression through Internet and its outcries – at last! – on a worldwide scale. It is this civil society which will loose the first revolution of the twenty-first century, embodied in the antiglobalisation movement: "Another World is Possible."

This globalisation, that of the human face, must shore itself up by the consolidation of a democratic public space on a world scale and in its permanent recreation at the national scale of fundamental values – "democratic ideals" they are called in the Constitution of the UNESCO – of liberty, equality, justice and fraternity.

What are the premises of this new beginning? The first may be represented by the magnificent verse of Miguel Martí i Pol: "Who, but everybody?" The new technologies at the service of education for all, and during their entire lifetime, though distance education, could assure the access of everybody and liberate mankind from ignorance and manipulation. Education is to "direct one's own life with good sense," it is having time to think and elaborate one's own answers, it is not responding to anyone's dictation, and the information technologies, along with the risk of converting us in receivers, in spectators instead of authors and transmitters, facilitate generalised access, permit that everyone, in whatever moment of life, can accede to information to the sources of knowledge. And they can participate... and therefore become true citizens of the world.

The challenge is to convert "distance education" in the instrument of an education without distance, democratic and adapted to each individual, available everywhere, without exclusions. It is the base of a universal education, open and without frontiers, human, non discriminatory and ethical. The danger which stalks us, here as well, is the existence of the "cyber-rich" and the "cyber poor."

The IT revolution is a source of unprecedented economic, social and cultural transformations, of which we can scarcely yet perceive the amplitude. Is this new industrial revolution the prelude to a new era of inequalities and segregation? Will it mean a growth of disparities between the rich and the poor on the world scale? To avoid this sad result will not only require important economic efforts, but also important human investments in education and training.

The new technology boom awakens great hopes because it creates a new generation of instruments which –properly used—can favour education, development, knowledge, democracy and pluralism. But what ethic and what aesthetic will preside over a world which finds itself interdependent, plural and de-territorialized, where distant phenomena will be related to close familiar events, and real life can be confused with virtual life?

This derailed revolution is capable of making "being informed" prevail over "being aware," information over reflection, knowledge over wisdom, giving way to a new "intelligence" more dependent upon influences and exterior representations. The more docile and submissive we become, the greater the risk that **José Saramago**'s question should come to fulfilment: "Will we finally arrive at 'technology 100, thinking 0?'"

Today we live in a world of "info-routes" y de "info-caverns". How can we integrate people who live at the margins of the information superhighways? The president of South Africa has reminded us that "there are more telephone lines in Manhattan than in all of sub-Saharan Africa" and that "half of humanity has never made a telephone call." For the 600,000 towns and villages which still don't have electric light, what are the information superhighways supposed to mean?

The battle is not only for diversity but for pluralism, which is the recognition, the promotion and the defence of diversity. Cultural pluralism protects us from "single thinking" which is imposed by a "single language," to serve a "single world business," as Danielle Mitterrand has warned. Globalisation provokes a massive hybridisation of cultures, which develops with the relative erosion of national cultures, the forms of encounter through the media, tourism or migrations.

Cross breeding is the guarantee of an identity in continuous evolution and enrichment when faced with the mass media which, when used unfairly, can be dangerous agents of cultural uniformity.

The inequality of the current distribution will facilitate the appearance of new forms of violence, domination and exclusion. Won't those who control the medium also be tempted to control the message? In view of these threats, everything depends on us, on our education, that is to say, on our capacity to decide for ourselves what we want to be and to do each day.

Coexistence and intercultural dialogue, as well as the free circulation of information and knowledge, will be the best policies in the face of technological globalisation, to protect the identity and cultural diversity in a democratic framework on the national and global scales. This means putting each issue in its place: values, knowledge, information, instruments… and thus encountering the present paths which the culture of peace has awaiting us, after so many centuries of violence, to provide future generations a more human, more luminous future.

3.2. Citizens' needs

The starting point for the development of the Information Society, and the determination of the role which ICT should plan in the achievement of basic development objectives, is without doubt in the hands of the men and women of Europe.

The **Annual Report on Human Development**, presented by the United Nations Development Program (UNDP) in 2002, points out that, probably, in economic, political and technological terms, the world has never seemed as free as it is today… nor as unjust. The new technologies and the rise of economic integration open roads to vast markets without restrictions, but in spite of these opportunities, 2.8 billion people subsist on less than two euros a day. Currently, one per cent of the world's rich has an annual income the equivalent to that which is earned by 57% of the poorest.

These evident differences are translated also into the possession and use of technology. We have already mentioned that the digital divide and the tardiness in joining the Information Society is just another expression of the socio-economic gap which exists between nations and social groups. That difference means, for example, that, according to the UNDP, 72% of Internet users live in OCDE countries and represent just 14% of the world's population.

It is evident then that citizens' necessities, their demands and priorities, will be very different according to their place of residence, social status and even their gender. Therefore, in order to make a trustworthy diagnosis of their necessities we must keep all these factors in mind.

Comparing the situation of developing countries with more advanced nations we note an important contrast in the identification of necessities. While in technologically more advanced countries the difficulty in advancing the Information Society resides in the lack of applications and content with which to advance their development definitively, in developing countries the difficulties are located more at the extremes of the pyramid. That is to say, in the identification of the demands and priorities of the poorest communities and in the infrastructure and technological solutions necessary to solve them.

The Information Society at the Service of Nations

(Estefanía Chereguini, Technical Counsellor, General Direction for the Development of the Information Society, MCYT[3])

[…] I can have access to the Library of Alexandria from a remote village in Amazonia. I don't have to rebuilt it there and fill it with volumes; I just need a computer and a modem. What some people doubt is that such an access would permit an Amazon aborigine to find something there written in his own language which would in some way permit him to improve his life, or at least permit his lifestyle to survive, respecting its rhythm and customs.

"Mankind, technology and wellbeing are, at bottom, synonyms," Ortega y Gasset, Meditation on Technology and Other Essays

With the passing of time the concept of wellbeing, or what are the tools which permit us to achieve it, change. Wellbeing is based on elements of physical, intellectual and emotional satisfaction, which permit us to feel good both as individuals and as an integral part of our community. Clearly the physical component implies eating, dressing and sleeping well. The intellectual aspect has to do with our mental capacities, and emotional wellbeing requires that we relate to the people around us and communicate with them. To facilitate all these functions, economizing time and energy—at least one's own physical sort—man has always felt compelled to develop different technologies. Those technologies, which have evolved along with mankind, have been based in the transmission of knowledge from one generation to the next. Nobody has built in a vacuum, rather on a foundation of previous knowledge, adding their own touch of genius. For example, the technology of obtaining food and conserving it has varied as much as the means of transporting it. Commerce, another of mankind's oldest activities, is a mirror of new times, including from the most ancient tangible goods to the latest intangibles. Along with ancient barter customs (currently back in fashion on Internet) we have commerce in futures, whose operations are carried out at the speed of light over a network of ever growing capacity and capillarity.

All human activities evolve with time: health, education, commerce, recreation, human relations. At bottom the objective of each one never changes, rather the form in which we carry them out. The concept doesn't change, rather the package. The final destination of a food article is to be eaten by a person, whether this is the result of an occasional harvesting of wild fruit or the consumption of a transgenic creation, obtained from seeds which yield fruit which are useless as the germ of future harvests, vacuum packed and transported by air in a cold storage compartment. By the same token we want doctors to cure us, we want our children to learn at school how to get on in the world, we want to acquire the goods which we believe we need without having to manufacture them with our own hands (for example, an electric blanket adapted to the car seat which I can acquire through Internet and which arrives at its destination in a village in the mountains of Madrid from California in less than three days.)

We want to have a good time, meet people and make friends. Previously our friends were limited to a circle which normally did not extend much beyond our families and the neighbours of next village. Nowadays that circle has grown, and it is possible that I may never meet some

[3] The Spanish Ministry of Science and Technology is the department responsible for policies of promotion and coordination of scientific and technical research, of technological development, of the promotion of the Information Society and the regulation of communications.

of the friends whose acquaintance I have made in an Internet chat room. I'll never shake their hands nor invite them to have tea at home, but even in the distance and in the intangibility of strictly virtual contact, they can still perform other functions of a friend: sharing my hopes and desires. By the same token, in all of the activities mentioned the form of transmitting and storing information in general varies, something vital for the human being.

The new technology in fashion among human beings descends from its remote origins. Today they're called "information and communications technologies" (the acronym in Spanish is "TIC," in English "ICT") and the society based on them is denominated "Information Society," or, if it attains a superior state, "Knowledge Society." One could point out that any human society should be thus named. Because in reality knowledge is the mark of identity of human beings, from the times when they were only *homo* until they became *sapiens sapiens*. What has permitted them to survive has been their capacity to share information through communication. That is what helped them, in spite of their apparent physical deficiencies, to constitute groups and societies capable of dominating a hostile environment. Thus human evolution, explained in terms of the object "communicate" and of the technology which accompanies this communication can be summed up as: first was the word, then writing, later the printing press which permitted mass production of books instead of the scribes' limited production, and finally globalisation which Internet has brought us, a utopia which at last seemed to put centuries of human learning at the disposal of all humanity. That is to say, from the orator to the scribe, from the scribe to the typesetter and from there to the website programmer, or what is the same thing, from him who listens to him who reads and from him to the navigator who ranges over oceans of information.

The evolution of technology has permitted information to become increasingly ubiquitous and accessible. As everyone knows, information technology has normally been linked to and at the service of the reigning power. And each time that a step has been taken to extend this technology to wider sectors of society, the existing structures have trembled. Nevertheless, these steps have been successfully taken. It was more difficult to have access to an incunabula than to a pocket edition, and if we achieve the desired evolution towards the democratisation of access to information, it will be even easier to access a website. But we are still on the path. The first editions which came off early printing presses were more easily accessible in the cities where the presses were located than in other, more distant, places, where the had to arrive by the hand of someone who transported them there. However, now information arrives on its own and at velocities which, for the moment, are not at everyone's disposal. In reality the new nuance of this technology is that we have started our machines talking to one another, in a rapid and efficient way and in a common language: bits. We have transmitted that gift, which makes us unique among living things, to our mechanical and electronic slaves.

At the beginning of the last century we could already send a voice far and fast with the telephone and, later, with the radio. By mid century we could send voice and images with television. With the written word, we overcame many centuries ago the limitations of time and distance. If we know the language in which they are written, we can understand messages written on clay tablets, papyrus scrolls, parchment or paper. What we do now, more than anything else, is to gain in instantaneity and volume, storage facility and recuperation of information, besides mixing all types of information in a single support: voice-image-text, creating multimedia information.

I can have access to the Library of Alexandria from a remote village in Amazonia. I don't have to rebuild it there and fill it with volumes; I just need a computer and a modem. What some people doubt is that such an access would permit an Amazon aborigine to find something there written in his own language which would in some way permit him to improve his life, or at least

permit his lifestyle to survive, respecting its rhythm and customs. Or if he doesn't find the information himself, perhaps he doesn't know how to read and write—it is possible that his language does not have written transcription—that a person responsible for the community Internet access centre from which he peers out through the window on the world be able to do it for him. In the end the aborigine may not find anything directly applicable to his life. I doubt that anyone can teach him to hunt monkeys with a finer technique, or to learn which are the seasons when the fruit of each tree ripen, in which pool to find the best fish, or the most efficient available remedy for a fever, that elusive plant which he knows so well. That is to say, perhaps Internet doesn't offer him anything tangible at first glance, but it is an opportunity to communicate, and he may want to tell all that he and only he knows about his world, give instead of receiving. And it is possible that somebody, knowing him, might take the trouble to protect his world. And perhaps the stories of our world might be useful to him some afternoon to amuse his people, the same as to warn them against future dangers. Frequently the uses of our tools turn out to be something different from that which they were designed for, and they wind up having a different use altogether. But for that to happen, we have to make the information-available to everybody, so as each person can take from them what he or she needs.

We have in front of us the World Information Society Summit, the first Summit of the twenty-first century. It seems very appropriate to begin the new millennium with a Summit with such a modern air, trying to construct the bases for a new type of society. In this Summit we want to face up, on the one hand, to ancient challenges with new faces, such as cybercrime, and on the other to equally old challenges with the same desolate faces, such as hunger, illiteracy and other issues which have taken on planetary dimensions such as the protection of biosphere. The Millennium Development Goals (MDG) identify these latter issues, the difficult challenges of development, and sets dates by which these problems should be largely overcome. The Summit tries to study to what extent the new ICT tools, with their multiple facets (from the "traditional" technologies such as telephone and fax, satellite radio communication, radio and television programming, to the more modern mobile telephony, digital television and computers with access to Internet) can collaborate in achieving these goals. Governments must share their experiences in the use of these technologies for development purposes so as they can be added to the commonwealth.

But, as we all know, it's not just a matter of the information existing. It's about internalizing it and adapting it to our necessities. The achievement of the Summit will not be clicking a mouse and having a steak appear on our plates. The achievement will be that all countries take notice of the changes that the uses of these technologies offer in a wide variety of processes, that they don't exclude anybody from their use, that they take into account their usefulness as catalysts and tools for development, that they share good practices, that when they return to their countries they don't waste what they've learned but establish the relations necessary to go deeper into these subjects. The object of the Summit is not to produce miracles, but it is the Agora where we share the knowledge which can produce miracles once we've returned home. It is the place where we demonstrate the political will from which these changes will arise.

As the poet Antonio Machado has reminded us "The path is made by walking...." For this reason we have wanted to set down our contributions to the Summit in a book of best practices. In the book there are examples of achievements and failures, which seek before all else, to contrast and share experiences with others. Following the age old method of trial and error, seeking better solutions, which are none other than those which pass the test of practice, as our forebears did in the past, seeking in each region the flint and wood best adapted to making a fire. The flint and wood best adapted to fire making change from region to region, but the utility of fire is the same, and we seek it with equal ardour. Fire warms and illuminates us all.

Nowadays we are also seeking the means by which information and knowledge may comfort and illuminate all of us. That is to say, we seek the ways in which they can contributed to better our lives and satisfy our necessities. In the end, we are not so far from our origins.

Program of Reunification of Children with Their Parents: The Use of the Information Revolution to Find Lost Children (IPKO Institute)

In wars and natural disasters children tend to become separated from their parents. Their reunification can cause enormous problems for relief agencies. The program of reunification of children with their parents, organized by the International Rescue Committee, was formulated precisely to resolve this problem. To do so a common database is utilized to which all the organisms involved in the reunification effort can refer. The organisms can present data and photographs of unaccompanied children, as well as search requests formulated by parents. Many searches which used to take months can now be resolved in a few minutes, minimizing suffering on the part of both children and parents.

In order for a program for the reunification of children and parents to become a reality, all search organisms of a given region should be able to present and examine systematically the data on lost children. The simplest way of achieving this is, of course, via Internet. Unfortunately, armed conflict rarely occurs in places with solid communications infrastructures or easy Internet access.

In Kosovo, the International Rescue Committee created, in Pristina, a common network, wireless and via satellite, via Internet (www.ipko.org). All United National organisms, the Organization for Security and Cooperation in Europe, various national missions and the majority of non-governmental organizations are connected to Internet 24 hours a day via this network.

As the cost of this technology is so low, the project can also permit that the local university, hospitals, libraries, school, news media and NGO's can also have free Internet access. In this way, international organizations not only manage to establish solid connections while saving money, but they also contribute to supporting civil society in Kosovo and to constructing a long-term infrastructure for Internet services there. The project has recently been turned over to a local independent NGO which is now completely autonomous.

This project can serve as a model for future humanitarian emergency situations. By constructing a common infrastructure for Internet services, international organizations will have more secure communications at very low cost and will be able to take advantage of this common access to data bases and other Internet-based applications to increase the effectiveness of their work.

When the crisis is over the infrastructure can remain in Kosovo and the local population can be trained to maintain it themselves.

About Citizens' needs

(Eduardo Sánchez Jacob, member of Engineers Without Frontiers[4] and of the Coordinator of Development NGO's[5] of Spain).

[…] Overcoming the limitation of the low educational level of users requires the simplification of interfaces. The ideal interface, for its simplicity, is the telephone, which permits two people anywhere in the world, just by dialling a brief sequence of digits. For the transmission of digital information we must move towards systems of text edition, email and webs which give priority to simplicity and economy of means over potency.

Our world is characterized by a great inequality between people, according to the place in which they were born or live, if they live in the city or rural areas; if they are men or women; depending upon their age; economic, educative or cultural levels. Therefore it is impossible to define the necessities of a set of "abstract" citizens without falling into excessive vagaries or generalizations. Engineers Without Frontiers has the mission of putting technology at the service of less-favoured people in developing countries, whom we can define as those who live on fewer than 60 euros a month, have a life expectancy of fewer than 50 years, an educational level below the 4th-grade level, or lack drinking water or stable electrical power sources. In this article we are going to present the necessities of these people who, although they remain a large collective, between a quarter and a third of the world's population (1.5 – 2 billion people), they have in common the lack of even the most basic necessities.

In situations of generalized poverty most necessities are never covered, so, beyond enumerating the whole list of necessities or demands, the important thing is to know which are given priority by the citizens and institutions, or what amounts to the same thing, to what necessities are they prepared to dedicate the few available resources. In order to simplify the analysis of necessities, these will be grouped in three categories: individual, social and political.

An initial approximation to individual necessities can be obtained from the work of Nobel Prize winner for Economy, Amartia Sen, on the economy of wellbeing, which served as the theoretical base for the elaboration of the Index of Human Development of the United Nations Development Program. According to this approach, the three principal individual priorities are: to live a long and healthy life, to have an education which permits choosing among different life plans, and to count on the minimum economic resources to satisfy the most pressing material needs.

The social necessities would be those which affect entire communities and are best satisfied through collective rather individual means. The Committee for Development Assistance of the Organization for Cooperation and Economic Development (OCDE) defined "Basic Social Services" which can serve as a good indicator of these social necessities: Primary education, basic health services, basic nutrition, control of infectious diseases, attention to reproductive health, supply and purification of small water supplies, etc. In these Basic Social Services the adjective "basic" has a double meaning as "elemental" and as "substrate" from which other substrates are satisfied.

[4] Engineers without Frontiers is a Non Governmental Organization for Development (NGOD) founded in 1991. Its objective is to put technology at the service of the battle against poverty and in favour of human development.

[5] The Coordinator of NGOD's was created 15 years ago by seven organizations as a single organ of coordination of the NGO's which work in international cooperation for development. Today it is made up of 103 NGOD's, in addition to 16 Autonomic NGOD Coordinators which, together, unite some 300 organizations dedicated to international solidarity.

Lastly, in order to live a decent life, citizens need to be able to participate in the public matters of their community, liberty to express themselves or travel, not to be discriminated against for motives of race, sex, creed or political orientation, etc. A primary definition of these political necessities was set down in the Universal Declaration of Human Rights in 1948. Since then, the debate regarding human rights is open, and little by little the concept of "basic rights" is being enlarged. For example, in recent years there is a tendency to incorporate the right to receive and transmit information as an essential freedom.

The Information and Communications Technologies can be strategic when it comes to guaranteeing the satisfaction of necessities of the least-favoured citizens of developing countries, but in order to achieve that they must overcome three important limitations:

- The scarce availability of economic resources
- The low educational level of the citizens, especially in technological aspects
- The rural settings, characterized by low population density, adverse climatic conditions and deficient transportation and energy infrastructures

In order to overcome the financial limitations it is essential to increase international public resources dedicated to the providing of services at affordable prices, which in many cases will be below the market price for some time. The rest of the cost should be paid collectively as it was in the industrial countries until the universalization of basic services. On the other hand, the resources should be utilized. Initial investment and low maintenance costs can be achieved by using older technologies which are still capable of providing reliable services, such as classical telephone and radio technologies. In order to maximize the useful life of installations, robust systems with standardized elements should be utilized. In order to divide the costs among the various users, shared public systems should be resorted to, such as public telephones and telecentres.

Overcoming the limitation of the low educational levels of users requires a simplification of interfaces. The ideal interface for its simplicity is the telephone, which permits two people in any part of the world to communicate by dialling a brief sequence of digits. For the transmission of digital information we must opt for systems of text edition, email and web which give priority to simplicity and economy of means over potency.

The deployment of communications networks in rural zones, which habitually have problems of electrical supplies and road infrastructure, can be advanced by the use of low consumption wireless communications systems which, in turn, can be powered by photovoltaic systems. The equipment should be robust and designed to withstand extreme climatic conditions with a minimum of maintenance.

In spite of the important technical challenge of guaranteeing universal access to basic services for the entire world population, the technological development of our society permits us to achieve it in a few years. Therefore, the satisfaction of basic necessities is more a moral issue than a technical one. While a vast majority of citizens of developed countries don't consider the eradication of poverty in the world as a priority, the gap between rich and poor, of which the digital divide is only one manifestation, will continue to grow.

The Digital Literacy Program as a Factor in Social Inclusion

(Frederic Cusí, Director of Programs of the Esplai Foundation[6])

[…] In the first place, what is clear is that the digital divide does not affect the different social sectors in the same way. Therefore, neither can we apply blanket solutions.

Can the learning of information technology help in the integration of the least-favoured social sectors? Those people who already suffer other factors of exclusion, such as a low level of formation, very little income, residence in conflictive neighbourhoods, being immigrants or women of ethnic minorities, can they overcome the digital divide? Will the breaching of the digital divide contribute to their social inclusion?

Our answer is yes, that it will always contribute to their personal betterment, and will have repercussions, albeit indirect, on their inclusion in society. The experience of the Red Conecta (Connect Network) Project, sponsored by the Esplai Foundation, permits us a positive outlook in this respect, and offers lessons learned on which we will elaborate in this article.

In the first place, what is clear is that the digital divide does not affect the different social sectors in the same way. Therefore, neither can we apply blanket solutions. Programs of computer literacy for university graduates or housewives with a good academic level, high incomes and a stimulating family and social situation, cannot be compared to those for an unemployed person, with limited resources, lacking confidence and learning capacity, and in a neighbourhood with grave deficiencies. Very often the digital divide is an expression of an existing social gap.

The *Connect Network* Experience

The Connect Network is a way of facilitating the learning of information technologies and an approximation to the ICT, in an atmosphere of proximity and good sense for people. How does it function in practice? The Esplai Foundation reaches an agreement with a local association, which functions in a given neighbourhood or municipality, to install a computer room in that association and work together. The Esplai Foundation contributes the equipment, a specific methodology along with the necessary didactic materials, forms a facilitator for the computer room, which is contracted for a period of one year, and offers support in the form of coordination, follow up and evaluation.

The local association, on its part, contributes the space to locate the computer room, proposes the person to be the facilitator and assumes the costs of paying this person during the second and third years. But perhaps the most important thing which the local association has to offer the project is precisely its capacity for social work in its own context, the proximity to the groups in question—young people, women, immigrants—with people who have participated in other projects and with those who have established relations of confidence and credibility.

The people who participate in the courses or training activities gain a sense of achievement in the computer room, see themselves progressing and perceive that training as something possible, within their capacities and with much less fear or reserve than they would experience in a similar experience in the setting of an academy or institutional centre.

[6] The Catalonian Esplai Foundation is a non-profit initiative created with the objective of promoting the education in their free time of boys, girls, adolescents and adults, as well as associative development.

In the last trimester of 2002 an independent evaluation of the results of the Connect Network was carried out. One of the conclusions was that 92% of the participants completed the training program which they had begun and that 85% consider themselves basically secure in the use of the computer, email and navigation over Internet.

These results, which tend to confirm the perception of the facilitators and directors of the associations, are accompanied by very positive valuations from the participants themselves regarding improvements in self esteem, community participation and the expectation of finding a job.

Red Conecta

The Keys to Success

➘ ***The placement in the framework of an existing association:*** *That is to say, the project is carried out in a place where there already exists a certain community of people, other projects involving participation and social inclusion and an institution which has first-hand knowledge of local conditions and a capacity for dealing with the people involved. This also assures more possibilities for the continuity of the project, as the NGO tends to incorporate it into its own project. A close working relationship among the Esplai Foundation, the local association and the facilitator is, of course, of decisive importance in the success of the project.*

➘ ***The Methodology:*** *Although in reality the methodology of the Connect Network is above all a philosophy, and it permeates all they do: the agreements with the associations, the action of the facilitators, the relations with the participants... If we look at in the setup of the courses or learning modules and the support materials, they are based on a combination of printed material and exercises with the computer, step by step, progressively, very clearly and in a manner which is graduated by the facilitator according to the capabilities of each individual.*

➘ ***The Role of the Facilitators:*** *This is an essential element, as these are the people who are in direct contact with the persons involves. Their capacity to relate, to dialogue, to motivate and to accompany is much more relevant than their computer knowledge. We have tried to avoid "pure computer experts" preferring educators, pedagogues and social workers who have been formed in our methods, which include a minimum technological base. The more personal implication achieved by the facilitators, better results.*

Other Factors Which Have Reinforced the Results:

➘ ***The Heterogeneity of the Participants:*** *The Connect Network centres have not become ghettos for minorities, rather they have conserved their heterogeneous character, a fact which permits the integration of diverse realities and which favours inclusion through mutual support. The learning experience is no longer an individual proposition, rather it acquires a group dimension*

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- ***Synergy with Other Actions:*** *Technical learning does not resolve problems in and of itself, and when IT training is imparted in the context of other activities, the results are better, with more possibilities to make sense of the training and to produce a real "appropriation" of the material learned. It is not the same thing going to a cybercafe or an IT academy as participating in a Connect Network centre, where there is contact with other people, group projects and a flow of people from one activity to another.*
- ***Free Access:*** *In the Connect Network centres the courses and training activities are supplemented with free access to the computer room, in established hours. This use permits the person who is learning or who has completed the basic formation to continue to use the computer for his or her email, Internet searches, work and free time. This is a stimulus and an important resource for those who cannot afford a computer at home.*
- ***Conclusion:*** *ICT learning and digital literacy contribute to social inclusion, though the process for attaining it should be adapted to less-favoured groups, based on the capacities of people, working close in and with proposals which have significance and sense for the people involved.*

New Technologies and the Elderly

(José Osuna Expósito. Coordinator for New Technologies in Peace Messengers[7])

[…] We are advancing towards a society in which information and communication are determining factors and in which knowledge is at a premium. And, in questions of knowledge, older people have a great deal to offer, given their experience.

Since 1998, "Golden Age Peace Messengers" has been one of the first non-profit organizations to bring the new information and communication technologies to older people, in an effort to integrate them in today's society.

Older people need, among many other things, help in overcoming the barriers which the new technologies present. The computer, Internet, and the new systems used in telephony, can convert older people who do not update their knowledge into authentic functional illiterates within our highly technified society.

We are advancing towards a society in which information and communication are determining factors and in which knowledge is at a premium. And, in questions of knowledge, older people have a great deal to offer, given their experience.

From the Centre of New Technologies for Older People, a set of programs are continually being developed to permit older people to become acquainted with and live these technologies, taking advantage of all the good they can bring and advancing in multiple projects which can and should consolidate older people and their world in today's Information Society.

The programs which are being carried out are:
Elder Internauts Solidarity, Golden Mail, Classroom of New Technologies, The Elders' Cybercafe, Golden Cable, Portal RedMayores.Net, Virtual Magazine "RedMayores," Hardware Technicians' Solidarity, etc.

Among these programs the following stand out:

1. Elder Internauts' Solidarity: Older people learn to use Internet for solidarity and self-help objectives (navigation, messages, search for useful resources, etc.). This program stands out for the way it permits older people to express their solidarity in ways such as training their own companions, and participating in other initiatives the object of which is to express solidarity with good causes worldwide

   The result has been that thousands of older people have learned to use the Internet medium daily in a practical way, with 150 of them staying on as trainers for new groups of companions. They have participated in campaigns such as: the World Day of Peace, World Embrace, Campaigns in favour of Guatemala and Argentina, Christmas presents for the elderly, Book Day, etc.

2. Portal RedMayores.net/org/es: This is the virtual meeting place for all of the members of Elder Internauts' Solidarity. Their desire from the beginning has been to be the principal

[7] The Messengers of Peace Association was created in 1962. It is a social initiative which the Spanish government has declared to be of public utility. It works on the national and international levels and has received among other recognitions for its work, the Prince of Asturias Concordia Prize.

portal where older people can find everything they need: useful and interesting information, counselling on questions of health, legal, IT, formation in ethical values and forms of participation through forums, chat, message boards, publication of poetry, short stories, etc.

3. The use of new technologies as a means of relating with one another is fomented through the Portal RedMayores. The use of these technologies generates in older people both a demand from more services and a higher cultural level among our older population.

4. The older person is better informed, not only in relation with the Portal RedMayores, but regarding what is taking place in Internet, thanks to the ease of access provided by the Portal and, most importantly, because all the content, counselling and help in the Portal are carried out by specialized expert older people themselves. Who better?

5. Classroom of New Technologies: To have access to the Information Society one needs knowledge and the ability to deal with new technologies. In order that this not be an impediment, relevant training courses are provided through which older people get to know the means which they have at their disposal in the web of webs. The object is to train the older person who requires it so as he or she can feel comfortable in handling the tools necessary to access information on the web. The most common tools which he should become acquainted with are email, Internet access, the working of the services offered in the Portal RedMayores, and even some notions of how to use a navigator. On the other hand, more specific training courses are given on themes related with office automation (use of word processors, spread sheets or other applications which may be considered of interest for the group in question). Other courses not related with office automation, such as the status of the euro, how to invest in the stock market, etc. These courses are supplemented by online support in the form of tools and contents which permit users to continue the training outside of class hours.

6. Golden Cable: The use of the computer and other tools tends to be more complicated for older people than the use of television, a communications medium with which they are already familiar. In this sense, the technology of cable and interactive television as a universal medium of communication, will facilitate extraordinarily older peoples' access to new technologies, when television, which until now has been a passive medium, is converted into an access medium for universal interactive communication.

   The projects propose to create an information and attention service aimed at older people, utilizing the technology and services which the cable operator provides as a communications channel. Older people will be informed regarding the available social resources through which they can channel their necessities, collect information, proposals, suggestions and complaints, foment the utilization of the resources in their surroundings, alleviate problems of solitude and isolation, all of this with the object of improving their standard of living.

   Information Technicians' Solidarity: *Technorescue* is a program which arose from two necessities expressed by older people:

   a. The older people who have received training feel the necessity to complement it by learning something of computer hardware so as to better understand it, repair it and recycle used computers.
   b. Many older people, computer technicians, feel the desire and even the need to transmit their knowledge to other elders as part of a voluntary program o as a simple act of solidarity.

Currently there is a group of volunteers who collaborate enthusiastically refurbishing computers donated by different entities. Once back in action, these computers are donated to different institutions or older people who need them.

These programs demonstrate how the society needs older people: they provide solutions and support to many people. For this reason, besides having ideas, experience and projects, many older people take advantage of all of the features of the Information Society and are in the vanguard, being real protagonists when it comes to offering solutions.

Education for the Development of the Information Society. Practical Experience: Get Hooked Up with UNICEF.

(David Martín, Director of the program "Get Hooked Up with UNICEF" ("Enrédate con UNICEF"[8])

[…] little attention is paid to the world and the language of adolescents when trying to explain the international and social reality. "Get Hooked Up with UNICEF" is motivated to deal with current themes and questions of social interest approached from a critical, human and young point of view. A complementary concern is that of generating educative and formative processes to accompany this phase of knowledge with others of reflection and practice, through didactic activities and the dynamization of teachers, animators, parents or tutors.

According to the Children's Rights Convention of 1989, one of today's great challenges is that of the access of young people to adequate and understandable information at each stage of their development. This is information which permits them to understand the physical, social and cultural setting in which they live, as well as being able to control their immediate environment, integrate and participate in it. This is one of the keys which permit people to express themselves and a fundamental process for development.

It may seem strange to us to speak of the necessity of access to information in a highly developed society such as our own, which coexists every minute with the mass media and in which we feel saturated with information. But we must insist that access must also foment a democratic participation in the society, as well as actively contributing to the creation of a secure environment for the young. The media themselves have that responsibility, and the entire society faces the challenge of digital and multimedia literacy, which permits the development of the most creative, critical and participative persons. If this effort is not made, in an integral and non-discriminatory way, we cannot associate the so-called Information Society to the concept of the knowledge society.

It is evident that neither technology nor information in and of itself, is a determinant of social change, they can only assist the process. We will always depend upon the posterior use which we give them and on the social context in which they are implemented. We must overcome, then, the grandiloquent globalizing discourse and get to work: it's not just that we're immersed in a moment of historic change, we are playing the main role in it. Children and adolescents are the future, but they are also the present: this is the moment to implement strategies in this field designed especially for young people, strategies which offer solid alternatives in terms of Internet content, as well as educating the young for reflection, selection, critical sense and participation in the media.

The "Get Hooked Up with UNICEF" Program

Education for development is one of the principal goals of UNICEF regarding youth and the society in general. Only by substituting existing values in rich countries, based on injustice and the lack of solidarity with the rest of the planet, for other values centred on tolerance, peace or respect for the environment, will it be possible to construct a truly sustainable development.

[8] UNICEF is the only United Nations organism dedicated exclusively to childhood.

UNICEF – Spanish Committee has been working since the year 2000 in the "Get Hooked Up with UNICEF" program, an experience which tries to apply those principles in actions based on Internet and the new technologies.

The object of the program is to promote infantile and adolescent participation in the construction of a world more concerned with justice and solidarity, providing young people with information adequate to their expectations and their form of understanding the world, and giving them, as well, the tools, ideas, resources and spaces necessary to assure their implication in the process. The program is designed for its message to form part of the educative context, applying it to school practices: creating a network of educative centres committed to the Rights of Infancy and favouring infantile and juvenile participation.

The main vehicle of this program is a website designed with specific spaces for adolescents and educators (www.enredate.org) which functions as a centre for information, teaching resources and participation where they can find popular, didactic and formative materials. The site proposes sensibility campaigns on the subjects of human development and international cooperation.

It is precisely information saturation which at times makes it difficult to discern reliable sources. On the other hand, little attention is paid to the world and the language of adolescents when it comes to explaining social and international realities. *Get Hooked Up with UNICEF* maintains the motivation of dealing with current and social subjects from a critical, human and young point of view.

A complementary concern is that of generating educative and formative processes which accompany this phase of knowledge with others of reflection and practice, through learning activities and dynamization of teachers, animators, parents and tutors.

Internet is, in this case, a source of educational information and resources for working with in the real world.

Educational Fundaments

EPD (Education for Development) could be summed up as all the forms of promotion, especially in young people, of attitudes and values such as solidarity, peace, tolerance, social justice and environmental awareness, on a worldwide scale, offering young people knowledge and aptitudes which permit them to act in a committed and responsible way.

The object is to encourage and sensitize young people to participate in the construction of the future and to foment those values not only in their own lives, but also in their communities.

Get Hooked Up with UNICEF, besides openly offering its educational philosophy, seeks to create a network of teachers and schools committed and sensitized in the promotion of the rights of infancy and the young, according to the United Nations Convention on the Rights of Children of 1989.

Concepts

Education for Development's educational model revolves around a series of global concepts which guide all of the *Get Hooked Up* actions with UNICEF:

- **Interdependence:** This requires the learning of the awareness that everything that happens in the world is interconnected. The planet maintains a delicate equilibrium in which everything is interrelated. In this way it is easier to understand and be capable of relating what one does at the local level to the wider context worldwide.

- **Images and Perceptions:** Through the exploration and knowledge of the different ways of life which exist in the world, we learn to recognize stereotypes and ethnocentric attitudes.

- **Social Justice:** This requires the acquiring of knowledge regarding the principles of human rights and how they can be denied or encouraged.

- **Conflicts and Their Solutions:** We must understand the varied sources and causes of conflicts and how they can be resolved, and learn to fight for peace in all of its manifestations.

- **Change and the Future:** We must understand that the measures which we take today will affect the future.

The Learning Process

These concepts are developed methodologically through a learning process based on:

- Knowing: becoming informed on the subjects which are on the agenda, as a basis for understanding and awareness
- Communicating: being able to reflect and apply that reflection to one's personal experience, thus acquiring a sense of participation and commitment
- Acting: Committing oneself. Asking oneself what one can do with one's own personal possibilities, in accordance with each one's individual reality

Within the framework of the program *Get Hooked up With UNICEF*, this process entails:

- Contributing analytical tools to our social environment
- Elaborating teaching and popularising materials to encourage participation, in accordance with the rights of infancy and their interchange among users
- Dynamize and animate participation close to home, based on the "little big things" in life which we can all do
- Seek forms of solving problems and conflicts on all fronts
- Form teachers/educators in the EPD philosophy
- Utilize new technologies, applying the principles of EPD to the world of Internet

Through all of the above we have learned that one of the fundamental elements in the program is that of achieving media coverage and other social projection of the projects, beyond Internet and the school context out into the wider society: the neighbourhood, the municipality, etc. For this reason, one of the fundamental aspects of the program is the dynamization of the actors involved. With this in mind, throughout the year, the program launches a series of mobilization campaigns which extend the application of the program beyond the Internet medium. For the past two school years we have organized competitions which deal with the theme of the Rights of Infancy and solidarity: the Audiovisual Contest (for radio or video programs) and the Literary

Contest (for short stories and poetry). Besides other campaigns and occasional activities, we follow up during the entire school year with activities designed to support international cooperation.

"For the Hooked Up". A Section of "Get Hooked Up with UNICEF".

"For the Hooked Up" is the section of Get Hooked Up with UNICEF aimed principally at teachers and other educators. It's a restricted-access section of the website with permits access only to users who have signed up (free) in the homepage. The signup procedure is as simple as opening an email account in any free server.

Its object is to create both virtual and real communities of young people, educators and centres which work on behalf of Human Rights. "For the Hooked Up" aspires to become a source of regularly-updated useful information in the service of values like solidarity, justice and tolerance. In "For the Hooked Up" educators will find, besides the material available in the main sections of the site, many methodological orientations and teaching aids to help them introduce principles of Education for Development into their daily lesson plans, material principally directed to young people between the ages of 10 and 16.

At this level:
Activities are proposed for work in the classroom or young peoples' groups, based on the content which appears in the free-access section of the site. Methodological and practical orientations are offered for the development of these activities.

Advice is given regarding sound pedagogical fundaments for the efficient utilization of the teaching possibilities of "Get Hooked Up". Furthermore, everyone who signs up receives a free subscription to the Get Hooked Up with UNICEF magazine, a trimestral selection of content from the website. Subscribers are offered a follow up by UNICEF technicians and volunteers who, among other things, inform and support them in the campaigns or initiatives available for their groups of young people.

To sum up, "Get Hooked Up with UNICEF" offers an alternative for teachers and young people who want to get involved in the world of solidarity, who seek an education committed to a series of values which permit integral and sustainable human development.

3.3. The Role of Civil Society

The concept of "civil society", in its multiple meanings throughout history, has always been impregnated with a component of social and cultural progress based on a sentiment of solidarity and struggle to construct a society capable of satisfying common necessities. Its development has constituted a cultural process in which five elements have intervened decisively: pluralism, independence, solidarity, the awareness of the common rights and citizen participation.

The interests and objectives of civil society are advanced by a group of organizations working for the common good, acting as intermediaries between public authorities and the citizens. These organizations are so important for the society that is habitual to refer to them as "civil society" without distinguishing that it is this which they represent. In accordance with the European Economic and Social Committee, the following types of organizations are included in the concept of "civil society:"

- Social agents
- Grass roots community organizations
- Local non-profit associations
- Non-governmental organizations
- Religious communities

Civil society always finds itself immersed in change, both actively and passively at the same time. In recent years there have been many parameters which have influenced the transformation of socio-economic models: the ongoing improvement in the status of women, as yet insufficient; changes in family models and relations; the radical change in religious attitudes and the secularisation of public institutions; changes in the labour market as a consequence, above all, of the technological revolution, etc.

The organizations which represent civil society work to channel those changes, provoke them or, simply, prepare different social groups to deal with them. For this reason, their role in cooperation and development, as agents of change and, above all, as support for the authentic protagonist of change, civil society. The advance of the information society is also a fundamental factor, the thoughtful use of its technologies being highly beneficial for human development.

Among other organizations the NGO's have increased their weight and participation considerably in all areas related to cooperation and development. According to the PNUD report on *Human Development 2002*, in the year 2000 there were 37,000 international non-governmental organizations (NGO's) registered, 20% more than in 1990. More than 2,150 NGO's have been recognized as consulting entities by the United Nations Economic and Social Council. Nevertheless, the participation of the NGO's in the United Nations system is still not complete. For example, they have not yet been recognized as consulting entities by the Security Council or the UN General Assembly. Only 251 of the 1,550 NGO's associated with the Department of Public Information of the United Nations are based in developing countries.

The organizations which represent civil society are, because of their proximity to citizens, **the ones who can best detect their priorities and demands**. They are the ones best acquainted with the impact, the difficulties and the benefits which are produced by the changes introduced into a community. Their challenge in the development of the information society consists in leading the battle for digital literacy among the least favoured sectors of the population, in taking advantage of technologies and putting them at the service of development, and taking

advantage of their proximity to the reality of the citizens to integrate the benefits of the information society into the fabric of social action.

Internally, the organizations of civil society are also affected by the digital divide; levels of technology use are still very low. This is one more challenge which they confront: the incorporation of the ICT to permit them to network, share information and have a solid global vision of the best use of ICT.

Towards a New Space for Collaboration Among Businesses, Administration and Social Entities

(Elena Acín Aguado, Director of the Chandra Foundation[9])

[…] The common objective of the three institutions is, in the widest sense, social cohesion. It is necessary to establish guidelines for dialogue in order to reach creative solutions which shun the winner-loser model in favour of negotiation strategies in which all can achieve their initial goals. […] the social entities have evolved from an assistentialist view of their activity to a much more long-term view in which, more than seeking to resolve individual situations, their aim is to create the conditions for long-term sustainable development.

In order for the new technologies to become a factor of social integration it must become an objective not only social organizations and the public administration, but that of businesses, as well, if they want to assure long-term economic sustainability.

The Information Society should be rolled out in the framework of collaboration among businesses, administration and social organizations. Though the traditional relation among these three sectors has been one of suspicion and lack of confidence, the evolution of each one of them, especially that of businesses and NGO's towards models of long-term sustainability permits us to predict the appearance of much more collaborative atmospheres in the near future.

Nevertheless, in order to achieve this more "collaborative" atmosphere among the different elements of society, questions arise such as: What is the adequate framework for producing this dialogue? What should the contribution of the social entities be? We are going to try to answer these questions in the following comments.

1. Conditions for Dialogue

The conditions which can permit a dialogue among the three institutions are basically three: mutual recognition, independence and a common objective.

a) **Mutual Recognition**: The starting point for any dialogue is the recognition of our interlocutor as a subject capable of maintaining that conversation and with something useful to contribute to it. We increasingly live and work in an atmosphere where the three entities are recognized as valid interlocutors in social action. Although there remain some mutual disqualifications and an important mutual ignorance, especially between businesses and NGO's, collaboration on concrete projects is leading little by little to a narrowing of distances. A good way to extend the information society would be for each one of the social agents to recognize the merits of each one of its interlocutors.

b) **Independence:** Many different sectors have pointed out the excessive dependence of NGO's on public administrations, since a high percentage of their income originates from government subsidies. Frequently the capacity of the NGO's to raise funds in the

[9] The Chandra Foundation is a private non-profit entity created in November, 1999 with the goal of utilizing the communications potential of new information technologies—especially Internet – to achieve a greater commitment on the part of all sectors of society –citizens, businesses and institutions – in benefit of the non-governmental organizations and less-favoured populations for which they work.

private sector is called into question, but this debate must be centred on the legal framework which has led to this situation. Under Spain's new Law of Patronage and Sponsorship there is still no incentive for private donations to social entities. The deductions for private donations is set at just 25% when similar reforms in other European countries foresee deductions up to 60%.

This scarce level of deduction, along with taxes, reduces the capacity of the citizenry to contribute to social projects and indicates an administration model which, instead of creating a legal framework which motivates free citizen participation, chooses to capture the resources and then distribute them as subsidies. Wouldn't it be more enriching if the citizens had more capacity to choose the organization which they wanted to support with their funds, perhaps collaborating with an organization which offers them services or with which they can collaborate as volunteers? The independence from the state of Spain's technology companies is also very questionable: the established regulatory framework has a strong incidence on their balance sheets.

c) **Common Objective:** The common objective of the three institutions is, in the widest sense, social cohesion. It is necessary to establish guidelines for dialogue in order to reach creative solutions which shun the winner-loser model in favour of negotiation strategies in which all can achieve their initial goals.

2. What Can the NGO's Contribute?

- **Long-Term Vision**: Social entities have evolved from an assistentialist view of their activity to a much more long-term view in which, more than seeking to resolve individual situations, their aim is to create the conditions for long-term sustainable development.. This long-term vision implies a totally new mode of working: it requires them to train and to create the social and cultural setting capable of guaranteeing the continuity of the project.

  Interestingly enough, the evolution of businesses seems to have been the inverse, especially in large companies listed in the stock exchanges, where the value of the company depends more upon short-term results than on a solid long-term business plan[10].

  The actions of the administration are dependent upon political regime changes and frequently fall into short-term plans based on the dictates of popular opinion.

  As a practical application for the development of the information society, it is necessary to understand digital literacy, not as the precise learning of computer applications, rather placing the emphasis on the utilization of Internet to resolve real-life daily necessities.

- **Give Protagonism to the People**: In social entities we increasingly understand our work as that of working together with people in order to seek solutions mutually. We tend to see people less and less as objects of help. We try to create the habits and capacities which permit them to propose solutions themselves, and create alternatives to their own

[10] "The short term is incompatible with sustainability . The constant necessity to create short-term value for the stockholder has led to many of the financial scandals which have arisen in recent months. We are seeing how public administrations are trying to prevent these crimes by putting the emphasis on audits. This approach is insufficient. It is necessary to go to the bottom of the question; we must consider what is the real finality of business, beyond the mere creation of value for the stockholder. With this short-term perspective conflicts can arise between stockholders and others, which is not the case with long-term perspectives. In order to satisfy the long-term interests of stockholders, it is necessary to satisfy previously the interested parties." Declaration by Miguel Angel Rodríguez in *Towards a Sustainable Business*, JORDI GOULA, *Tomorrow Magazine.*

situations.[11] What does this mean for the development of the information society? It means involving the affected people in the definitions of projects and the detection of necessities. We must consider as the fundamental point in the implantation of the information society not only questions of access and distribution of content to less-.favoured groups but also the generation of content by the less-favoured collectives themselves.

- **Attention to People and Their Integration:** Those of us who work in the entities are not interested in any particular facet of the people we work with, rather the people themselves, giving them an opportunity to decide for themselves. We are interested in their social, economic and cultural integration.

- **Integration Methodology:** The social entities have wide experience in the work of integrating marginal collectives into the social dynamic.

- **Efficiency:** The almost chronic lack of financial resources on the part of social entities has, nevertheless, a positive side: the organizations have optimised the management of their scarce resources so as to achieve maximum positive effect.

- **Relations Built with Less-Favoured Collectives and Knowledge of Their Necessities:** The social entities are aware of realities which until now have awakened very little interest among companies and are distanced from public administrations, but which must be integrated so as to guarantee a stable environment.

It is to be hoped that this desirable new framework for cooperation might contribute to the information society being an instrument of cohesion and not a widening factor for the digital divide between developed and developing countries. This digital divide is not exclusive to developing countries, as is demonstrated by the great number of groups of people on the margin in developed countries, excluded and disfavoured, who do live and will continue to live outside of the information society if we do not begin immediately to construct the channels which will permit the benefits of the new technologies to benefit the whole society.

Practical Experience of the Chandra Foundation

The Chandra Foundation was created in November, 1999 in an effort to put the new technologies at the service of social action and development. In the three years the foundation has been functioning we have initiated three projects: www.canalsolidario.org (digital magazine on social subjects), www.hacesfalta.org (volunteer portal), and www.solucionesong.org (portal to share knowledge of social action subjects). The following notes explain each project in more detail

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[11] "In this way a culture of cooperation is established which is both an approach and a method of intervening: if in the assistential relationship someone has the necessity and the other part possesses the solution, in a cooperative relation, everyone gives and everyone receives. The assistance is built upon necessity; the cooperation on potentialities. In the process of assistance, some people are identified as wanting and others as benefactors. Assistance has in its favour clarity, immediateness and a certain social inertia which declares people as permanently needy." Youth, University and Social Compromise, Joaquín GARCIA ROCA, ed. Narcea, pag. 94

1. Canalsolidario.org (Solidaritychannel.org)

www.canalsolidario.org is a digital magazine on social subjects. It seeks to inform in such a way as to achieve greater commitment on the part of institutions, businesses and the public administration to social action. To achieve this goal it offers the following services: updated news about social subjects, a guide to non-profit institutions, an agenda of the principle events, a bookstore, a training section and a forum, among others.

Canal Solidario initiated its activity in November, 1999, and the results obtained to date are the following: 400.000 page views monthly with an annual growth rate of 100%, and 10,000 people subscribed to the newsletter. These numerical data do not reflect the most important point, insofar as it is not easily measurable: the support received by NGO's for their projects thanks to the diffusion of their activities on the Canal Solidario website. This is the object of the project.

Lessons learned: in accordance with the evolution of Internet, we find the following factors essential:

a) ***Non-exclusivity of the virtual world:*** *It is necessary to have a certain contact with users outside of Internet, especially with NGO's.*

b)

c) ***Cultivate interactivity:*** *Procure that communication not be just one way, that it reflect the opinions and knowledge of internauts and lead to the generation of communities of interest formed around the different subjects dealt with on the site.*

d) ***More specialization*** *in content related to social action and development cooperation*

2. www.hacesfalta.org (www.you'reneeded.org)

Hacesfalta.org is an Internet portal designed to promote volunteer activity and to facilitate the processes of finding both voluntary and remunerated posts in NGO's for people with an interest in collaborating with them. In this supply-demand section for jobs there are also other specialized services such as the creation of interest groups, a training section, publications and testimonies of people who work as volunteers.

The Hacesfalta.org portal was created in November, 2000, and in two and a half years the results obtained have been the following: 800,000 page views monthly, 24,000 subscriptions to the weekly newsletter, 117,000 contacts between volunteers and volunteer job offers from the NGO's. Hacesfalta.org works with more than 800 organizations.

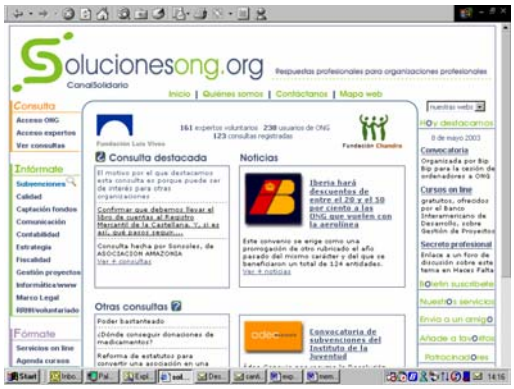
The lessons learned are the following:

a) The experience has contributed to the professionalization of volunteers, since we ask the NGO's, when they submit a request for a volunteer, that they provide a detailed job description and the required profile.

b) We discovered the necessity of personalized counselling, to teach the NGO's the utilization of the tools involved.

c) We have fomented the interchange of experiences among the volunteers.

3. www.solucionesong.org (www.ngosolutions.org)



The solucionesong.org project is a space for sharing knowledge and best practices in social action and development projects. Those who participate in it are not only the professionals and volunteers of the NGO's, but also business professionals. The project is promoted by the Chandra and Luis Vives Foundations.

The services offered by Soluciones ONG can be grouped into three principal blocks:

- *Free online guidance offered by expert volunteers*
- *Specific content relating to the different management areas of the NGO's*
- *Training: information regarding training courses of interest to NGO's and online resources to reinforce in-person courses*

The project started up in January, 2003, and after four months online the results are the following: 50,000 page views monthly, 900 people subscribed to the weekly newsletter, 160 expert volunteers signed up and 253 NGO's which use the service.

Fast-Deployment, Economic Basic Telephony

(Valentín Villarroel Ortega, Engineers Without Frontiers and researcher at the Polytechnic University of Madrid[12])

[…] a technologically appropriate option is not enough. The infrastructures require the complementary support of normative and legislative measures which permit alternate strategies to those traditionally followed in areas of greatest economic development. In some cases we should permit a more efficient exploitation of available technologies, for example, freeing up the use of WiFi technologies, or the deployment of public telephone services based on IP technologies. In others we should facilitate and stimulate the creation of small companies, providers of telecommunications services in local areas.

The infrastructures necessary for the development of an information society for all depends upon the levels of development and the necessities which need attending. Engineers Without Frontiers has the mission of putting technology at the service of the social development of the least-favoured sectors of the population. As we have demonstrated in the section on the necessities of citizens, the communications priorities for the least-favoured group are centred on basic voice and data communications, which can be covered with basic telephone services and email.

When we speak of information and communications technologies, we must not forget the old technologies of diffusion (radio and television) which continue to play a crucial role in the access to information, communications and knowledge for the least-favoured sectors of the population. These classic telecommunications infrastructures have achieved a practically universal coverage with radios at affordable prices for even the most humble economies. Radio broadcasts with content of local interest reach the most remote zones of the world, including areas of difficult access which may lack even electric power.

Compared to radio, television has less coverage and more expensive terminals, but its extension is also very wide, thank largely to satellites in the cases of the most remote places. It is not very expensive to mount a local radio station, and this makes it possible for the local population not only to consume content, but to generate it according to their interests. This converts the radio into a communications system which is much closer to the people than the television.

The countries with highest income represent only 15% of the world's population but they have 58% of the telephone lines, while poorer countries, with 60% of the world's population, have only 15% of the fixed telephone lines. Nearly two thirds of the homes in the world do not have a telephone. There is a long road ahead before we can assure a universal access which includes the least-favoured population of the world.

Connectivity strategies for isolated populations of poor people depend upon their distance from existing telecommunications networks. A great part of the developing world's urban areas do have telecommunications infrastructures. They also have a high concentration of population and services, a greater economic dynamism and a greater average buying power among their inhabitants. All of this assists the market in finding formulas to provide access to their low-income populations (for example, special micro-payment systems, small internet cafes, etc.). The suburban areas tend to be close to areas covered by fixed and mobile telephone services,

[12] The Polytechnic University of Madrid celebrated its 25th birthday in 1996, though the majority of its centres are centenary institutions founded between the eighteenth and nineteenth centuries. Each one of them maintained an independent existence until they were grouped together in the PUM.

so it becomes feasible to deploy mobile telephone services there. But the principal access problem is in rural areas, with low-income populations, where the deployment of telecommunications networks is not profitable. In these zones infrastructures are required which are cheap, modular and rapidly deployed, which will finally permit operators to offer affordable low-cost service to the weak economies of those areas.

The rural areas of developing countries have a series of factors which condition the possible technologies which might be employed: limited transport and energy infrastructures, geographic obstacles, shortage of technical personnel and low population densities. Only radio-based systems can offer solutions in these circumstances. Technical solutions for all situations do not exist. In some cases the solution lies in new applications of old technologies, in others the adaptation of existing technologies for use in rural areas, new developments specially adapted to isolated rural zones, or the combination of some of these options in mixed-technology networks. In the case of voice, systems of voice over IP permit low priced telephony appropriate for low-income economies. Some concrete examples of these technological options are narrow-band packet radiocommunication sistems (VHF, UHF or HF bands), wireless systems for computer networks (known as WiFi systems), cellular systems on VHF bands (such as CDM450 or GSM400 systems), systems based on the combination of a wireless local loop with point-to-point or point-to-multipoint (such as the DECT or PHS systems), or satellite systems (VSAT systems or those based on LEO satellites).

But a technologically appropriate option is not enough. The infrastructures require the complementary support of normative and legislative measures which permit alternate strategies to those traditionally followed in areas of greatest economic development. In some cases we should permit a more efficient exploitation of available technologies, for example, freeing up the use of WiFi technologies, or the deployment of public telephone services based on IP technologies. In others we should facilitate and stimulate the creation of small companies, providers of telecommunications services in local areas..

So as not to restrict access to populations with limited resources and formation, terminals must be cheap, simple to and easy to maintain locally. In the most basic data transmission systems the personal computer is not always the simplest and cheapest option. Currently there are options for simpler or cheaper terminals, such as equipment which integrates telephone, fax and email, simple email terminals, simplified computers used exclusively for web access, low cost pocket computers, or small client systems.

International priorities should be centred on the extension of basic telephone networks, which is the simplest telecommunication system to use, the cheapest and which permits access to email.

Spanish American Health Link

Information and Communications Technologies for Rural Health

Engineers Without Frontiers

The Spanish American Health Link program (EHAS) equips rural health centres in Latin America with telecommunications networks and health-related content.

The areas in which the program works have low-income populations, deficient health indices and health systems which do not offer the desirable level of quality.

These are areas of difficult access, with very low levels of electrical power and basic telephony penetration. The technological infrastructure makes use of narrow band radio adapted by EHAS. It is especially designed for rural areas in developing countries. It is low cost and permits voice and email communications between health centres in remote areas which lack telephone access and electrical energy. The health content is centred on the improvement of epidemiological monitoring, upgrading the ongoing training of rural health personnel and increasing the effectiveness of rural health systems. These services are also developed by EHAS and designed to meet the necessities and characteristics of rural health personnel.

The first project of this program was carried out in the health centres of the province of Alto Amazonas in the department of Loreto in Peru. Alto Amazonas is one of the poorest areas of Peru, with the greater part of the population living from subsistence agriculture, with low levels of training and deficient hygienic conditions. They have a single hospital, 11 health centres and 81 "health posts" for a population of some 100.000 persons in an area with an extension similar to that of Belgium. Currently more than 40 of these health centres and posts have the EHAS system and services. This has permitted substantial improvements in the health situation of the inhabitants of Alto Amazonas. It has reduced the time for the urgent evacuation of patients from eight to five hours, which has permitted them to save 60 lives in the first nine months of operation. It has reduced by three quarters the trips necessary to deliver epidemiological reports and by half the detection time for malaria. The impact of the program in the reduction of infant and maternal mortality has been immediate.

The EHAS program is run by personnel from Engineers Without Frontiers, the Polytechnic University of Madrid and Latin American universities and research centres. Program participants work on the transference of development, content, knowledge and experiences to national agents capable of extending this type of technology and services to wide areas of the countries in question. Currently the program is functioning in Peru, Colombia and Cuba.

Teaching to Fish with Nets

(Manuel Álvarez, Coordinator of the ICT Area for Development, of Energy Without Frontiers[13])

[…] "Teaching to fish with nets" means, on the one hand, that each cooperation project intended to contribute to long-range development must contemplate the contribution that Information and Communications Technologies might make.
[…] But "teaching to fish with nets" also has another meaning. It means that the NGO's and other representatives of civil society must internalise the changes which the Information Society brings. They have to assume the Information and Communications Technologies, put them at the service of their projects and their own internal and external organizational processes and use them as an instrument for "teaching to fish."

The Chinese proverb says "It is better to teach someone to fish than to give them a fish." This is increasingly the philosophy which guides international development organizations. They are working to go beyond specific actions in order to work with a long-term vision which contributes to the larger development of nations. "Teaching to fish" is an increasingly convincing approach offering viable and reproducible projects which encourages institutions and local administrations to support this "fishing tackle" and extend programs throughout their territory. This philosophy is having a tremendous impact and serves to foment development programs with new perspectives.

Just as nets are an invaluable element in fishing, which multiply the catch achieved by simple fishing poles, another type of net, based on Information and Communications Technology, is the new instrument which can multiply the catch in terms of creating favourable conditions for long-term sustainable development. So convinced of this is United Nations Secretary General, Kofi Annan, that in the reading of the Millennium Declaration, he announced the creation on the part of the United Nations of a new organism dedicated to voluntary service in Information and Communications Technology.

Beyond considerations of the possibilities of integrating new technologies into projects as technical solutions for solving infrastructure problems, or resolving concrete communications necessities, the information and communications technologies are beginning to play a fundamental role in the relations among different cooperation agents: local institutions, NGO's, counterparts, beneficiaries of projects… That is to say, it conditions the relations of everybody who works on common projects, often separated by distances of thousands of kilometres, by great time-zone differences and imposing natural barriers. The networks which the Information Society extends can, in this sense, contribute to all of these relations being managed with greater fluidity and efficiency.

"Teaching to fish with nets" means, on the one hand, that each cooperation project intended to contribute to long-range development must contemplate the contribution that Information and Communications Technologies might make. But "teaching to fish with nets" also has another meaning. It means that the NGO's and other representatives of civil society must internalise the changes which the Information Society brings, they have to assume the Information and Communications Technologies put them at the service of their projects and their own internal and external organizational processes and use them as an instrument for "teaching to fish."

[13] Energy Without Frontiers is an independent foundation, with its own criteria and decision making processes, whose mission is to extend and facilitate access to energy services and drinking water for those who still don't enjoy them, or whose access to these basic services is precarious or through inappropriate procedures.

In this context, one of the great opportunities which presents itself to the NGO's is the implantation of networking as a model of collaboration. Networking, supported by Information and Communications Technologies, is being extended throughout organizations as a model which lends greater flexibility to organizations and greater freedom for those who work in them. These qualities, united to the ability to overcome distances and the necessity to attend "in person," convert networking into an ideal working model for NGO's and their volunteers, both internally and in their relations with colleagues and beneficiaries.

But introducing Information and Communications Technologies, either for networking or to support specific activities, implies a set of changes which go beyond the technological infrastructure to affect the whole organization, its makeup and the profiles of its volunteers. The first obstacle is that of not being able to count on an adequate infrastructure, although it might prove effective. The prime obstacle is, however, not knowing to what extent technology can contribute to achieve the objectives of the organization. Once this question is resolved, and it is agreed to keep the technology factor always in mind when planning operations, then it is possible to incorporate Information and Communications Technologies with certain guarantees of success. The natural steps in the utilization of networks will then be: define objectives, the differential aspects in working with Information and Communications Technologies, plan the necessary resources and evaluate and control progress. At the end of the day, everyone involved must comprehend that the incorporation of Information and Communications Technologies doesn't mean merely doing the same things with new tools, but doing things in an entirely different manner.

Nowadays the third sector is also affected by the Digital Divide. This not only has to do with these organizations' access to equipment and connectivity, which fortunately is growing, but for the lack of real access, reflected in the daily use and extended training and the effective use of Information and Communications Technologies. The impulse of the people who lead these organizations will be vital in advancing along this path and narrowing the gap which the NGO's suffer with respect to other organizations. The conviction on their part that the Information Society has become a requisite for development will be a decisive step in giving the protagonism they deserve to Information and Communications Technologies in cooperation for development and the fight against poverty. In this way, perhaps we can truly say, "It is better to teach a man to fish with nets rather than tossing a couple of hooks into the sea."

3.4. The Role of the Private Sector

As the Coordinating Committee of Commercial Interlocutors has indicated, in the overall vision of the results which the World Information Society Summit will produce, the private sector is probably the only one capable of providing all the investment necessary to put together the infrastructure, the technology and the tools necessary to deploy the Information Society.

Fully aware of this situation, both the public sector and civil society are demanding of businesses a greater cooperation with development projects, a greater social commitment and more solid alliances with the administration. Thus, the **ICC** (International Chamber of Commerce) reflects in a document entitled *"Business in Society, Making a Positive and Responsible Contribution",* that in recent years there has been substantial growth in the number of principles, values o codes drafted by public institutions and non governmental organizations to be observed by the private sector. And they're not only drafted; they demand that companies adhere to these initiatives, assuming a more active role in development.

The private sector, for its part, desires that it be recognized for the critical role it plays in the development of the Information Society and requests policies which foment competition and private investment, stable reglamentary frameworks and national strategies which facilitate the development of the Information and Communications Technologies.

Furthermore, the private sector is immersed in the debate as to how to meet the challenge of joining the development cooperation cause, promoting initiatives among employees, contributing resources to cooperation projects and balancing traditional commercial objectives with long-term objectives which are in line with social and economic benefits for the least-favoured sectors.

Business as a Motor of Innovation

(Francisco Javier Barranco Saiz, Director of Social Projects Area of the Telefonica Foundation[14])

[…] We must compute the initiatives of the great foundations which invest in social R&D along with those of businesses, guarantors of the exploitation of services which have a viable market; of NGO's which are observers of necessities and opinion leaders in their fields and, crucially, of the administrations which should lead the strategy of development of the information society for everyone, the establishment of priority lines of social research and the enlargement of pilot projects, converting them into new social services or value-added complements.

The businesses of the Information and Communications Technologies sector have, by our very nature, a permanent technology R+D activity. Through the Telefónica Foundation we try to transmit part of that technological research to social necessities, promoting activities in the fields of education, art and culture, developing social and health applications, contributing to social insertion, community development and the promotion of volunteer work, among others. These activities, which greatly favour social and economic development, drive progress and foment equality of opportunities among citizens, both men and women.

In order to assure that the largest number of people join the Information Society and to put the technologies at the disposal of the social groups, Telefónica freely assumes the commitment to progress with the societies which it attends and launches social R+D strategies and projects in which the following factors converge:

- **Diagnosis of necessities** in the given area of social research. In order to achieve that end, all of the organizations which work in these fields should become involved: NGO's, the competent administrations…
- **Development of content** which ranges from virtual visits to monuments to service portals, specialized web content, conventions ….
- **Technological research activities**, in particular those oriented to adapt technologies to the specific needs of different groups or to provide them with the necessary initial infrastructure.

The development of these projects is complemented with pilot experiences which contrast user satisfaction, the utility of contents, technological suitability and the level of implication of NGO's and the relevant administrations, both with the experience itself and with the future of the project. Depending upon the characteristics of the project, the maintenance of the associated service could be annual or multiannual, but after a certain number of years, social R+D culminates. The question, in most cases, is, what happens then?

Once the development and the pilot projects are finished, supposing that the results are satisfactory, we find ourselves with different possible scenarios:

- That some organization exists (NGO, administration or company) which is interested in the permanent rendering of the service in question. In this case, the starting conditions for those who pick up the reins are unbeatable, as they have the

[14] In 1998, Telefónica created the Telefónica Foundation to promote and manage the social initiatives of all members of its group of companies in the countries where they operate.

initial investments already covered and benefit from the evaluation of results which indicate the possibilities of sustainability. Unfortunately, this scenario, which should be the continuation natural of social R+D, occurs only infrequently. Efforts to implicate other organizations in the course of the projects and/or their transference after the initial process, confront multiple difficulties: budgetary, organizational, leadership, technological… Thus, it occurs that "institutional" projects find themselves orphaned by the institutions to which they might be transferred.

- Another possibility is that, not being viable the generalized extension of the service, some competent organization maintains the line of social research so as to take advantage of the effort already invested in the project and enrich it with new contributions. This scheme, if applied to more than one project, would generate updated resource centres for sharing, but neither is this easy to achieve.
- Finally, if no organization with adequate resources and competencies picks up the results of the project, these results find themselves dissipated with time, losing the greater part of their value. Thus, many projects which have functioned satisfactorily in the pilot experience die because no organization commits itself to supporting them or, at least, to work on solutions aimed at guaranteeing their sustainability.

It seems clear that the principal challenge which faces us is that of the sustainability of projects and the possibility of profiting from the subsequent investment of creativity, work and money. In order to continue to advance, we must compute the initiatives of the great foundations which invest in social R&D along with those of businesses, guarantors of the exploitation of services which have a viable market; of the NGO's which are observers of necessities and leaders in their fields and, crucially, of the administrations which should lead the strategy of development of the information society for everyone, the establishment of priority lines of social research and the enlargement of pilot projects, converting them into new social services or value-added complements to those already existing.

I would like to close with a list of projects which are currently functioning and whose impact has been very positive:

EducaRed

The EducaRed program is a plural initiative to incorporate Internet into classrooms and facilitate the use of new information technologies in primary and secondary schools, fruit of the Framework Agreement "Education on the Web," signed in 1998 by practically all of the institutions which make up the Spanish educational community.

The project was born with the challenge of involving teachers and education agents, parents' associations and the students themselves. The object of the project is that all of these collectives might benefit from the advantages which Internet offers in the field of teaching. Currently, EducaRed reaches 10,000 centres, 300,000 teachers and almost 3,500,000 students.

The principal objective of EducaRed is to enlarge and improve Internet educational resources, preferably in the creation and promotion of new materials and teaching innovations. All of these activities are materialized in a web or portal with

international pretensions which aims to be a common space for all educational centres, and all students and teachers.

Twinning Between Schools

The Twinned Schools program is a forum for the exchange of projects and ideas among the schools of EducaRed distributed across Argentina, Brazil, Chile, Morocco and Peru. It is a program which permits teachers and students from different schools to work together during a given time on a common project. The results of this activity are reflected in a section of the site called "Escaparate" (Shop Window), in which they deal with such varied themes as nature conservation, philosophy and ethics, rural schools or cultural interchange. The object of the initiative is to go beyond the infrastructure, creating authentic virtual classrooms where all boys and girls, as well as parents and teachers, can participate.

Patrimony

The Telefonica Foundation has taken it upon itself, in line with its commitment to the fields of art, education and culture, with the help of information and communication technologies, the mission to divulge the awareness and appreciation of the artistic and architectural jewels of the Spanish historical-artistic patrimony. New techniques of virtual rendering have been called in, techniques capable of offering internauts nearly real visits to places and monuments with results which are accessible on the web for everybody.

This visualization task has been complemented with projects of conservation of patrimony through digitalization of historic archives and the creation of virtual libraries.

The Handicapped

The Foundation has developed various projects designed to help handicapped people. Thus, in collaboration with the principal associations of disabled people, Merc@dis was created, an Internet job exchange for people with disabilities. The object of this job market is to put job aspirants in direct contact—without intermediaries-- with companies which have jobs to offer. Currently the portal enjoys the participation of more than 500 companies and has generated more than 1,500 job offers for handicapped persons.

Another interesting project in this field was the SICLA project, aimed at victims of cerebral paralysis or, in general, persons incapable of verbal communication who require a global communication system adapted to their needs.

Risolidaria

The Telefónica Foundation also develops projects to help those who help, the NGO's, offering them instruments to increment their efficiency and intercommunication, such as the International Network Solidaria (Red Internacional Solidaria,Risolidaria). This is a telematic support platform to facilitate the activities carried out by non-profit organizations in the countries where they have a greater presence.

In this way the NGO's can divulge their activities (projects, campaigns, movilizations and courses) as well as improving debate and coordination among themselves. Through the use of new information technologies a new virtual community solidarity can be configured which serves as a reference in the relations, interchange, participation, formation and information among different NGO's and their members.

Corporate Volunteers

The program of Corporate Volunteers of the Telefonica Group was created to potentiate voluntary work among the employees of the group, facilitating and developing the means necessary for those volunteers to be effective and permanent. Thus, the corporate volunteer program is aimed at organizing and strengthening the development of a network of solidarity, constituted voluntarily by the people who work in the Telefonica group of companies. The object of this program is to carry out actions of social interest in a proactive way and in line with the objectives of Telefonica's social action program.

Reflections on the Role of the Private Sector

(Ángel Córdoba Díaz, General Subdirector of Caja Madrid and Managing Director of Human Resources of the Caja Madrid Group)

[…] "Within the broad spectrum of cooperation aimed at reducing the digital divide, our experience has been satisfied, not only through the achievement of concrete business objectives, but in our role as social agents (fundamentally in the development of digital literacy among people who are potential social opinion leaders)."

Introduction

"Nowadays governments realize that they cannot do everything, that society's objectives can only be achieved through cooperation and alliances with a wide range of actors, including the private sector, civil society and other groups." Kofi Annan

The object of this article is to extract, from the experiences and lessons learned by Caja Madrid[15] in the integration of the employees of the group and their families in the Information Society-- –"Project Internet at Home" and "Portal ePeople- concrete lines of action on the part of the private sector which can be transferred to other settings and other situations.

Private-sector initiatives in digital inclusion were, until recently, few and far between. Normally they were limited to advances in infrastructures by technology companies. Nevertheless, after our experience we understand that the private sector's range of possibilities for action is much broader than we expected. We now believe that the financial sector should be considered an essential actor in the task of driving the Knowledge Society, not only through the financing of projects but for its ability to approach different social layers from a standpoint of confidence and security. Financial institutions can play an active role in forming social opinion, awareness and customs.

Convinced of the activating role of the private sector and based on our previous success (§ 2. *The Caja Madrid Initiative: Phases and Outstanding Aspects*), we have opted, among all the possibilities for private sector action, for development, social compromise and technological partners (§ 3. *Aportaciones del papel del sector privado a la luz de la experiencia de Caja Madrid.*)

The Caja Madrid Initiative: Phases and Outstanding Aspects

Inicial Phase: *Active collaboration with public administrations; involved **partners**/actors*[16].

Since the planning stages of the project to approximate the Information Society to the employees of the group, along with their families ("Internet at Home"), Caja Madrid has had an interest in participating actively in all initiatives launched by the public sector to extend the benefits of the Information Society.

[15] (Private entity of the banking sector with a strong social compromise, manifested through their Social Program and the Caja Madrid Foundation)

[16] (SOCIAL COMMITMENT)

Aware of the fact that the Information Society requires the contributions of many actors with complimentary synergies, Caja Madrid has selected for the project the cooperation of Telefonica (wide-band communications networks) and IBM (infrastructures: PC's): first level of integration.

Development Phase: *Initiative for the development of people: e-inclusion of people and companies + e-learning + the creation of virtual communities* [17]

The next level of integration in the Information Society is the delivery of content by the creation of the "Portal ePersonas". Caja Madrid opted for a two-pronged strategy:

1. *"Useful Internet" and the total integration of groups (**e-inclusion**)* [2] *: which is about reducing the digital divide from a double viewpoint*:

   - Developing quality content in Spanish – thus overcoming the language barrier, with friendly, familiar content aimed at a group the majority of which is navigating on Internet for the first time. We opted for secure access and navigation as important ways of avoiding user inhibition.
   - Encouraging the incorporation into the Portal of online businesses – a virtual mall offering services to our families. Priority is given to small and medium-sized companies.

2. *"The Knowledge Society": An integral plan to consider people as the essential assets in the Information Society (**e-learning and virtual communities**)* [2]*: the economic assets of the New Economy are people.*

3. *On the one hand*, Caja Madrid makes a special effort to reinforce our human capital through the training of people in the use of Information Technology. ("digital literacy training") and in the utilization of innovative and inclusive e-learning content ("at your measure, at your rhythm, on your schedule"). Members of the group and their families, aware of the importance of ongoing training and employability, appreciate the content which they receive as well as the necessity for training. On the other hand, Caja Madrid, has opted for a program of strengthening of its human capital through the constant flow of information among the members of the group, which creates true virtual communities, which benefit not only our business, but the members of the collective and the society in general.

Final Phase: *Social commitment: employees and families as **consumer motivators*** [18].

Employees and their families, incorporated in the Knowledge Society through the programs such as that sponsored by Caja Madrid, are the best group to promote the true social change necessary to make integration in the Knowledge Society possible.

The Role of the Private Sector in the Light of the Caja Madrid Experience

a. Development Cooperation

- Promoting the e-inclusion of people through content and applications:

[17] (SOCIAL COMMITMENT)

[18] (SOCIAL COMMITMENT)

- Creating initiatives and backing public projects which potentiate the concept of an Internet which is "useful," "safe," "familiar" and "friendly"
- Offering other businesses, institutions and governments the availability of quality content which overcomes the barriers related to the different cultural and educational levels and knowledge of languages, content fully adapted to the necessities of the object market in each country or area
- Collaborating in the development of content which simplifies people's lives and improves their quality of life.
- Potentiating the use of tools which permit people to create links to the community from all perspectives (friends, family, social circle, institutions, businesses…)

➘ Promoting e-inclusion in businesses:

- Encouraging the incorporation of businesses into the new economy, especially through support of initiatives by small and medium-sized companies. In this respect Caja Madrid created in the year 2000 a business specific to this area called Caja Madrid e-Business.

➘ Strengthening the development of human capital as an essential asset in the Information Society, putting special emphasis on e-learning content.

- Stimulating training in the Information Technologies as a key element in formation which the information society demands in order to eliminate the extension of "pockets of digital poverty"
- Promoting the acquisition in the company of "digital competence."
- Incorporating the massive use of e-learning and the ICT's in the workplace and personnel to help potentiate the employability of people.
- Promoting the interchange of knowledge and the integration in the Information Society through the creation of virtual communities.
- Creating a critical mass of persons connected to the Information Society (as key users in the society), which permits them to "create demand" for the services and, by doing so, lead the rest of the society in the same direction.

b. Social Commitment

➘ Creating a social fabric of companies with the commitment to incorporate their employees and their families in the Information Society
➘ Investing in people and in their competencies, avoiding at all costs any form of discrimination
➘ Stimulating the concept of company employees as social consumer motivators: employees as a privileged element and agent of change at local and national levels

c. Technological Partners

➘ Collaborating in development alliances and the execution of innovative initiatives among pubic administrations, private businesses and civil society: emphasizing the complementary character of programs and the necessity to join forces and establish common synergies, given the fact that no single actor can achieve the complete process of reducing the digital divide.

➘ Fomenting initiatives which permit people to accede to the Information Society at reasonable prices.

- Committing to offering services with quality, security and confidence.

Within the wide spectrum of cooperation in the reduction of the digital divide, our experience has been satisfied not only by the achievements of concrete business goals, but for our role as a social agent (principally in the development of people who are now digitally literate and are potential social opinion leaders in this area).

Caja Madrid, based on their own experience, understands that, if a large number of companies would assume the social commitment and were conscious of the necessity to generate opportunities for access to the Knowledge Society for their employees and their families, the private sector would play a proper role in the reduction of the digital divide. In any case, the support and incentive of the public sector ought to be firm, continuous and coordinated with private initiative.

Internet at home Portal e-personas. Cajamadrid.

1. Background

In the year 2000, aware of the impact of Internet and the new Information and Communication Technologies (ICT) on business objectives and their commitment to society, the Caja Madrid Group sets in motion a strategic plan with an innovative objective: achieve business goals through the incorporation of Internet and new technologies in the daily habits—at home and at work—of the employees of the group and their families.

2. Previous Analysis of the Project

Two facts stand out from the detailed analysis of our group:

a) That the majority of the families of the Caja Madrid Group did not have the necessary infrastructures for acceding to the Information Society -- PC's, communications lines - and
b) They had seldom connected to Internet, fundamentally because they lacked "digital literacy" and because of fears and insecurities as regards Internet navigation.

3. The Philosophy of Approaching the Project

Given the findings of the analysis, parameters are laid down for the design of possible actions:

c) Don't obligate people. It has been repeatedly shown that learning by obligation can have results which are counterproductive; on this occasion, any initiative should be based on necessity, not obligation.
d) Make them aware. The "digital divide" is not a pathological state of persons. The general population is not even aware of the level of access to the knowledge

society, so the first step is to make them know why the Knowledge Society is necessary in order to better personal and family life, even as a vehicle for conciliating both.
e) Support. Although people become aware of the convenience of using Internet in their daily life, this does not logically lead to them acquiring the means of diminishing the digital divide. For this reason, Caja Madrid, mobilized the means necessary to support actively this process by means of a two-part global project: Internet at Home and Portal ePersonas.

4. Strategic Factors for the Success of the Project

There are several barriers which should be taken into account in order to guarantee the success of the project:

Barrier	*Caja Madrid Solutions*
The costs	↘ *In order to minimize the barrier associated with the purchase of infrastructures (equipment and lines), Caja Madrid established two lines of action:* ↘ *Financiation of approximately 65% of the cost of the equipment (PC – desktop or laptop, with DVD and color printer)* ↘ *Total subsidy of the cost of installation of the equipment and flat rate Internet access (24/7) during the first year.*
Problems of installation and the first connection	↘ *The installation and first connection of the equipment was not left in the hands of the families, rather it was confided to professionals.*
Slow navigation and the lack of security in Internet	↘ *To overcome the barrier of slow and insecure connections, the Caja Madrid installed the infrastructure to create their own Internet Service Provider (ISP) and a virtual private network, facilitating connections with maximum access velocity, quality and security.*

Telephone incommunication while navigating the Web	➘ *The problem of telephone incommunication during navigation was solved by the installation of DSL service where possible, or, in other cases, with the installation of a second analogic phone line dedicated exclusively to Internet access.*
Lack of ICT knowledge	➘ *The lack of "digital literacy" was overcome by the creation of a Helpdesk (7 days a web, 365 days a year) and with the offer of courses of office automation, English and Information and Communication Technologies for the whole family.*
Unfamiliarity with Internet	➘ *The Portal ePersonas proved to be an excellent platform in overcoming the barrier of unfamiliarity with Internet. It permitted the integration of contents (articles and "information pills") which gave users the necessary competence for Internet navigation.*
Apathy/ Dismotivation	➘ *Regarding the demand for Internet content and services, it was necessary to activate services for overcoming the initial apathy—based fundamentally on lack of knowledge. To do so Caja Madrid took a dual approach: the continuous personalization of content which responded to the actual preferences of users, and the creation of an exclusive canal within the Portal ePersonas for certain services.*

5. Projects which Facilitate Access to and Integration in the Knowledge Society

Associated with the objective of supporting access to and participation in the new Knowledge Society, is the creation of two great projects:

➘ *The "**Internet at Home" project**: to make available to the 12,000 families of the group the necessary infrastructure (equipment and line) to access Internet in a secure manner*

➘ *The "**Portal ePersonas**": to facilitate a smooth transition to the Information Society through personalized, individualized content and to contribute to the incorporation of Internet use into daily life*

The "Internet at Home" Project

The principal challenge of the "Internet at Home" was the question of providing the homes of the 12,000 families of the Caja Madrid Group with the necessary infrastructure (equipment and line) to permit them to access the Information Society securely.

To carry out the project a three-month implantation schedule was established and a policy was defined which centreed on the minimization of entrance barriers (costs, installation and first connection problems, slow connections, telephone incommunication during navigation, unfamiliarity with ICT and the Internet, and apathy/lack of motivation) and on the elaboration of a quality offering in terms of features attractive for the whole family and as personalized as possible.

The offer was launched on May 10, 2001 and completely finished on July 31, 2001.

The "Portal ePersonas" Project

*In order to reinforce the natural attraction of the members of the Caja Madrid Group to the Information Society, and as a necessary complement to the "Internet at Home" Project, Caja Madrid developed the **Portal ePersonas** ("Enter from wherever you like, from work or from your home, discover that the new technologies are available to everybody and find everything you need to manage aspects of both your family and professional live, taking advantage of the benefits of doing so in the context of a virtual community.")*

The objectives of the Portal ePersonas were:

➔ *From the professional point of view (E. Professional): to facilitate a new channel which would improve internal efficiency in the field of Human Resource Management, and would individualize the relations with the group's professionals. The benefits for the person include an increase in his or her autonomy and the capacity to manage information themselves. This contributed to the integration of professional life and family life, and in an increment in the employability of the members of the group, fomenting self learning (e-learning).*

➔ *From the family point of view (E. Familiar): to contribute to the use of Internet in the daily habits of the group's families, with the logical benefits: incorporation in the Information Society on equal terms; access to complementary online public services, especially Internet and the Information and Communications Technologies; access to support services for young people, women and the elderly; and access to a dynamic medium of electronic transactions, through a Virtual Mall.*

The objectives of the Portal ePersonas are achieved through a dual approach:

*1. The very **structure of the Portal**, which consists basically of:*

***E. Professional**, subdivided into the following channels:*

- *Self service, the object of which is to increment the autonomy and management capacity of people – individualized information in real time – facilitating the approximation between Human Resources and the members of the group.*

- *Virtual classroom, with the objective of incrementing members employability and encouraging their self learning process, but putting tools at their disposal which favour the development of the person.*

- ***E. Familiar**, subdivided into:*

- *Community Channel (Canal Comunidad), with the objective of integrating a community of 35,000 persons with common interests based on content and value-added services.*

- *Teaching Channel (Canal Didáctico), with the objective of encouraging the permanent use of computers and the new technologies, with special emphasis on Internet.*

- *Thematic Channel (Canal Temático), with the objective of spreading the knowledge of the most relevant contents of Caja Madrid's corporative web.*

*2. The **selection of content for the Portal**, which followed the following guidelines:*

- *Initial impact, achieved by the profuse use of attractive graphics*
- *Exclusive economic advantages*
- *Attractive and exclusive services offering value added to the families of the group*
- *Content and services with permanent access*
- *Services and content with a social component*
- *Individualization on demand of content and services*
- *Didactic content on the subjects of ICT and Internet.*
- *Individualization of the professional situation of each person*
- *Exclusive channel for Human Resources services and for professional development*

6. Results Obtained

The principal indicator of success in both projects is the degree of utilization of Internet and the services offered by the Portal ePersonas.

In order to measure the success of the experience we defined the following ratios:

Degree of Internet adoption: Internet access of 12,000 familie

Collective	Degree of Internet Adoption
European Union	3 in 10
Spain	2 in 10
Caja Madrid	9 in 10 (85% ADSL; (flat rate, 24 hours)

Degree of Fidelity and Permanence on the Portal:

Indicator	Results (last 12 months)
Average navigation time	17 min./day
Average number of sessions per user	7.229

Degree of Utilization of Content and Services (Data February 2.003)

	Most Visited Services		Percentage by group
Entorno Familiar		Young people	32%
	Community Channel	News media and recommended sites	13%
		Escape! (Escápate)	13%
	Didactic Channel	Interested in learning and knowledge?	11%

	Most Visited Services		Percentage by group
Professional Field	Self-service channel	My paycheck	41%
		My SVR	28%
		Financial resources	10%
		Library	57%
	Virtual classroom channel	Processes and operations	16%

Most visited sections		Percentage in tools
Tools	My mail	47%

Search engine	*32%*

Detailed analysis of the results leads us to affirm that the both projects, "Internet at Home" and "Portal ePersonas" have been resounding successes both in terms of levels of use and in the acceptation and recognition accorded the program by the users. Furthermore, from the point of view of Caja Madrid, it not only means meeting the objectives of promoting access and integration of people in the Information Society, but also the culmination of our business objectives and the elevation of the level of employability of staff with much lower costs than would have been necessary through other paths of action.

All of this obliges us to reaffirm the necessity to place a firm bet on raising the awareness and offering overall support to people in your organization (technological efforts, content and people, inside and outside the family and professional settings) as the formula for eliminating the digital divide in a definitive way with the involvement of private company initiative.

A Study of the Information Society

(Birgit Gocht, Ana Ortiz and Martín Grasso, AHCIET [19])

[…] One observes in the region a decided interest in joining the era of the Information Society — "IS." This interest is manifested with variable intensity in different countries of the region, the differences extending even to the quantity and quality of the proposals, whether the themes are education, government, health, culture, social inclusion or others. The positive evaluation which the private sector makes of the convenience of collaborating with the public sector is noteworthy. Businesses are also impressed by how much is left to be done in this field, given the relatively low number of projects carried out in collaboration compared to those developed as individual initiatives in both sectors.

Presentation

The present text is a rough draft of an advance for a study being carried out by the Hispanoamerican Association of Research Centres and Telecommunications Companies (AHCIET) for the World Information Society Summit (CMSI).

AHCIET, in anticipation of the World Information Society Summit, which will be celebrated in Geneva in December of 2003, has taken on the task of illustrating the importance of the public-private alliance for the development of the Information Society ("IS"), among other factors which seek to describe the maturity of the "IS" concept in the region.

With that in mind, in this document we try to trace general lines with respect to the advances that the region has achieved in this field.

Reach of the Work Achieved

The work done is based on an exploratory survey among the associates of AHCIET, and in the analysis of other complimentary research efforts, such as the study of information on "IS" available in the websites of our associates and other entities related with the subject of IS. In this first stage the data relative to Spain has been omitted, since it was decided to focus on the Latin American and Caribbean realities.

All of the associates of AHCIET were invited to participate in the survey, thus permitting the gathering of information on 52% of the countries of the region, which represent about 60% of its population. These percentages regarding the reach of the work, which can be considered reasonably representative, are even greater if one considers the complementary information mentioned in the previous paragraph.

Principal Conclusions

One observes in the region a decided interest in joining the era of the Information Society — "IS." This interest is manifested with variable intensity in different countries of the region, the

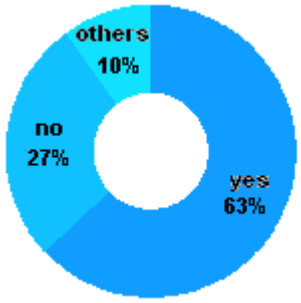
[19] AHCIET is the Hispano American Association of Research Centres and Telecommunications Companies, a private non-profit association created in 1982 and made up of more than 50 telecommunications companies in 20 countries of Latin America and Spain.

differences extending even to the quantity and quality of the proposals, whether the themes are education, government, health, culture, social inclusion or others. The positive evaluation which the private sector makes of the convenience of collaborating with the public sector is noteworthy. Businesses are also impressed by how much is left to be done in this field, given the relatively low number of projects carried out in collaboration compared to those developed as individual initiatives in both sectors.

In spite of the different degrees of progress observed, it seems clear that the subject has been acknowledged as relevant in the majority of the areas countries. In terms of the available resources and the limitations or barriers which the region presents, the effort is being made, through public and/or private-sector initiatives, to permit the countries of the area to enter into the new era of Information Society services.

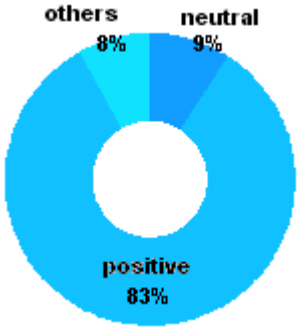
What follow are the most relevant statistics of the survey, which reflect, in our opinion, the line of thinking of the associated companies which have participated in the survey:

Awareness of recent Information Society studies in your country



Faced with the question, "Do you know if there has been a recent study in your country on the subject of the IS, at either the national, regional or local level?" the answers were predominantly positive: 63% of cases. Similar answers were given when the question has to do with the government's action in the promotion of the IS, with 83% of positive answers. Both indicators tend to demonstrate the existence of a willingness on the part of governments and the private sector to research and promote the development of IS in their respective countries.

Your government's activity in the promotion of the Information Society



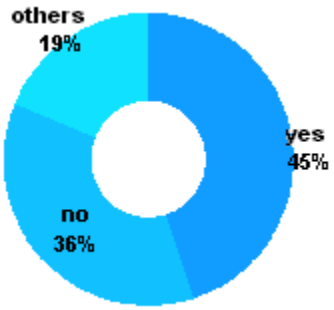
This willingness is manifested in some cases through private-sector initiatives such as the publication of studies of the information society which our associates have carried out in Brazil, Peru and Spain. These studies elucidate, in each one of the mentioned countries, the present situation and future perspectives. There has also been public sector activity, such as the

participation of international organizations in IS studies under the auspices of the United Nations Program for Development or the National Connectivity Agendas.

In relation with the positive perception which the private sector has of government action in the promotion of IS, the following are just a few examples which tend to justify this perception:

1. The existence of a government "electronic plan" which foresees the implantation of processes and public services which utilize Internet, as well as services such as telephony, snail mail and other means of communication for the zones which lack Internet access
2. Projects oriented towards the improvement and extension of education through the use of ITC, with the emphasis on rural areas and less-favoured sectors.
3. In other cases the creation of the legal framework necessary to promote the development of the Information Society, is a positive factor, through the validation of electronic signatures or the use of Internet in public organisms to achieve interaction with citizens.
4. Also noteworthy is the installation of Infocenters at the national level, as well as...
5. The organization of forums and conferences on the subject of IS and…
6. The creation of a fund to finance projects in this field, although this has not been easy to achieve, and the remains a lot of work left to do.

Does the private sector participate in the national IS strategy?

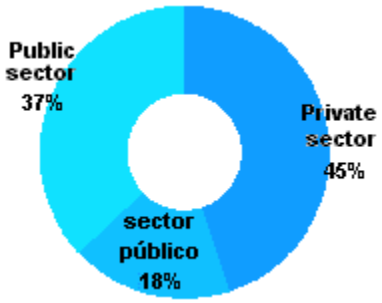


When the question has to do with the degree of participation of the private sector in the definition of the national IS strategy, the percentage of positive replies drops to 45%, as compared to the high percentages of affirmative answers which were obtained to the previous questions related to the existence of IS studies and the type of government action in the promotion of IS. This could indicate that, although 83% of those surveyed consider government promotion of IS as positive, their desire is for greater government participation in the form of forums, work meetings, commissions and public queries in which the administration consults the private sector either directly or through the business organizations which represent them.

The highest percentage of positive answers was registered in reply to the question: Does your company collaborate with the public sector in the promotion of IS. In 100% of cases the answer was positive, affirming that their companies had developed initiatives in collaboration with the public sector in at least one of the following areas: education, health, government or others.

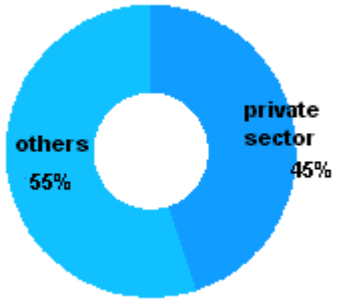
When asked about the models of investment applied to finance projects carried out in collaboration with the public sector, 45% of the answers indicate that the investment came principally from the private sector, with 18% affirming that the greater investment was provided by the public sector. If we associate this question with the following one, which refers to which had been the investment models of the projects with the most positive results, we see that the study group also opts for the private sector, with 45%.

Investment model in collaboration with the public sectorGreater investment by:



The fact that the initiatives which were financed by the private sector are perceived as more satisfactory, according to 45% of the replies, demonstrates the interest and the commitment of the sector in the development of projects destined to promote the IS, at the same time as it shows the private sector's management and execution capacity to promote this type of initiatives and to do so successfully.

Investment models of projects with most satisfactory resultsThose financed primarily by:



As a consequence, one might surmise the convenience of giving an incentive to active private sector participation in the execution of this type of initiatives. The private sector's experience would help to guarantee more efficient management, thereby increasing satisfaction levels and the sustainability of the results.

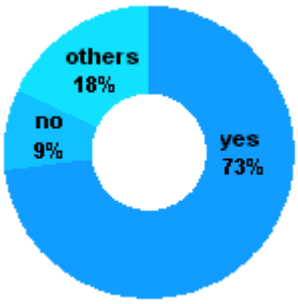
Seen from another angle, the promotion of models of collaboration and joint public-private management and execution of initiatives aimed at promoting IS is a real necessity. Within the framework of public-private alliances, both parts share risks and each one should assume a series of commitments within its own area of responsibility. Thus, it is up to governments to lead the development of the Knowledge Society and to create the conditions necessary to guarantee an adequate return on investment to permit the private sector to assume the risks involved in the investment in infrastructures and in information and communications technology.

Evaluation of public-private alliances as generators of profits and business opportunities

As far as the evaluation of the impact of alliances between the public and private sectors, 63% of the respondents coincide in that they are "positive," and 19% chose "very positive." This is a very favourable overall evaluation of the benefits of collaboration between the two sectors, which reaches 82%, if we add up both opinions. This discovery stands out, as it seems to indicate a powerful spirit of teamwork with the public sector in the promotion of initiatives which, as we know, are complex and costly. These initiatives require bringing into play diverse multidisciplinary tasks which require an adequate representation and participation of the different sectors of society. The private sector's willingness to participate is clearly reflected in the survey: 100% of the private-sector companies which replied to the survey has collaborated with the public sector in some IS initiative or another.

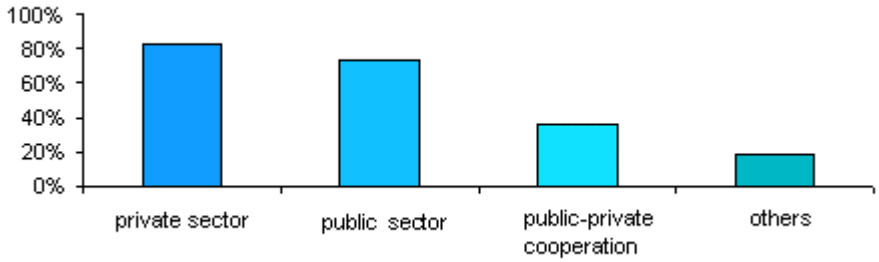
By the same token, an adequate participation of the different actors in the society increases the probability that the IS initiatives be successful, taking them as objectives in the design stage. The necessity to satisfy the requirements expressed by the different sectors of the society, not forgetting general aspects such as: the sustainability of the projects, the minimization of the digital gap, the gradual and non-traumatic advance based on the management of change, and the necessity for the initiatives generate authentic value for citizens in their daily life and are not an end in itself.

Influence of these projects in the formulation of strategies and public policy



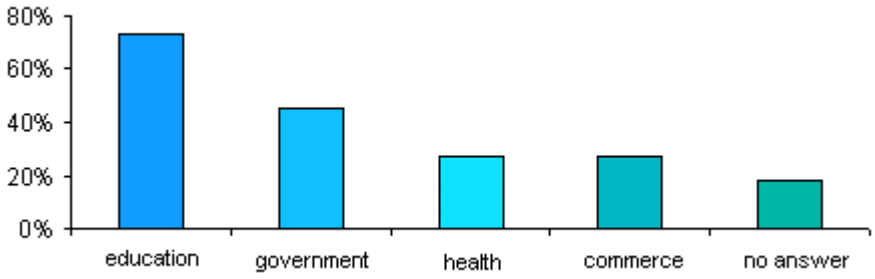
The fact that 73% of opinions considered that the initiatives developed have influenced the formulation of strategies and public policies for the development of the sector is noteworthy in itself. From this we could conclude that the initiatives may be functioning as actual pilot projects, even though they were not conceived as such. This is a positive development, since it means that public administrations know how to capitalize on the experience and knowledge which are generated in formerly unexplored areas and which, in most cases, constitute authentic innovation projects.

Knowledge of any IS experience carried out in your country by the initiative of:



We have previously seen the benefits, the willingness to participate and the collaboration of the private sector with the administrations in IS initiatives. However, if we look at the figures regarding citizen awareness of projects developed by the private sector, the public sector and jointly, the results are: 82%, 73% and 36% respectively, which shows that the joint initiatives appear to be a minority compared to the individual efforts of both sectors. This situation seems to imply the possibility of increasing collaborative work between the two sectors, and this requires the study of models which permit efficient collaboration.

Areas of cooperation between the public and private sectors which have produced most benefits

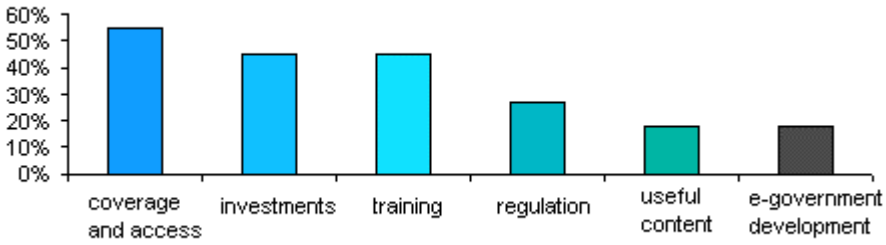


The areas of cooperation between the public and private sectors which are perceived as having produced the greatest benefits are: education 73%, government 45%, health 27% and commerce 27%.

The survey also studied the roles of universities, NGO's and other representatives of civil society in the development of IS initiatives and collaboration with the private sector. The most relevant data returned show that 55% of the respondents recognize some project carried out in their country and directed by a civil organization. And 63% acknowledge that the firm in which they work has developed projects in collaboration with universities, NGO's or other representatives of civil society.

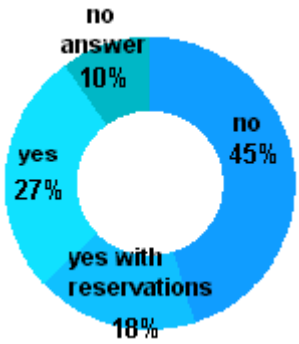
In answer to the question as to which have been the results obtained from cooperation with these entities, 45% of the sample view them as "very positive," substantially fewer than the almost 82% favorable answers which we observed when we analyzed the degree of approval of the alliances between the public and private sectors.

Challenges to IS satisfying the necessities of users



Finally, respondents were consulted regarding the challenges of the public and private sectors in their respective countries in spreading new information society services to all social strata, in generalizing their use and promoting the demand for services which meet the real needs of users. The responses were the following: 55% coverage and access facilities, 45% incentives for investment and financing necessities, 45% training and cultural barriers, 27% necessity for appropriate regulation, 18% necessity for useful content, and 18% development of electronic government.

Regulatory framework adequate for the promotion of IS



Regarding the adequacy of the regulatory framework in respondents' countries for promoting IS, 45% said no, 18% said yes but with reservations and only 27% considered it adequate. These results reflect one of the principal demands which the private sector has insisted upon during the preparation for the World Information Society Summit and which refers to the necessity of establishing stable regulatory frameworks which favor the growth of innovation and private investment in ICT and permit the development of infrastructures and new services as well as increases in connectivity.

Iberomunicipios.org

The Iberoamerican Network of Digital Cities (Red Iberoamericana de Ciudades Digitales) is a space open to all those Iberoamerican towns and cities which have created or desire to create e-government solutions, as well as others interested in promoting and executing initiatives in the field of electronic local administration in order to encourage citizen incorporation in the information society. This is a project of the Hispanoamerican Association of Research Centers and Telecommunications Companies (Asociacion Hispanoamericana de Centros de Investigacion y Empresas de Telecomunicaciones - AHCIET), non-profit association with the goal of promoting telecommunications in Iberoamerica.

Its ultimate aim to become a reference for local government representatives, the private sector and civil society, as collectives involved in fomenting the development of the information society in Iberoamerica, in the promotion of local e-government initiatives.

The portal www.iberomunicipios.org is the basic tool of the network and permits mayors, public sector employees, professionals and other managers to get to know new platforms and innovative technologies, as well as e-government applications and content directed to citizens. On the other hand, the portal facilitates the interchange of ideas and information among all of the agents involved in the development of this type of initiatives.

This website offers members and partners of the Iberoamerican Network of Digital Cities a platform for the exchange of knowledge and best practices in electronic government. This network will facilitate the start-up of new initiatives and the interchange of information and knowledge among the towns and cities of Iberoamerica.

The network has been designed so as to extend its services freely to all the municipalities of Iberoamerica which assume the commitment to the development of the information society and want to form part of the web of collaborators. Its Iberoamerican dimension permits the creating of synergies, favours cooperation among members, giving them the possibility to establish stable contacts with other actors in the region who are directly involved in the development of new technologies and services for the citizens. In this sense, the network enjoys the political support of the principal national initiatives of the information society in Iberoamerica, who see in this AHCIET initiative a useful tool to complement and integrate their efforts at the national level.

In the field of cooperation for development, the network is a complete and integral platform designed to channel international support and funds, when available, to stimulate the development of e-government initiatives in the region. In this context, participants have access, through the network, to institutional funds to support projects of this nature in the region. As well, the initiative promotes new forms of cooperation and the creation of alliances between the public and private sectors, as well as horizontal cooperation among municipalities, thus contributing effectively to the development of the Global Information Society in Iberoamerica.

The members of the network should demonstrate a clear commitment to the development of e-government in their own localities and cooperation with other towns and cities. In exchange, the network offers members a series of benefits:

- *beneficial conditions for access to training courses*
- *participation in projects and technical cooperation*
- *access to specialized information*
- *exchanges and virtual conferences with experts*
- *access to information regarding funds and international and regional support programs*
- *cooperation with the principal actors in the development of the Information Society in the region, making possible the creation of alliances between the public and private sectors*
- *possibilities to participate in the demonstration projects*
- *the possibility to demonstrate to the Iberoamerican community the advances of the city in the implementation of e-government solutions*

3.5. The Role of the Administration

Public administrations face an important task in the construction of the Information Society, as they must develop policies which favour the penetration in the society of new technologies and their access by all social groups.

As we pointed out in "e-Services, a challenge for public administrations", published by the *Spanish Federation of Municipalities, Telefonica and Enred Consultants*, this task can be expressed by the triple condition of **regulator and opinion leader, service provider and user of the new technologies** around which the new society will orbit.

Among these functions, one that is frequently singled out is the legislative and regulatory role, since the success or failure of the information society depends, to a large degree, on the legal framework in which it is developed.

On the other hand, the administration should assume leadership in the area of e-inclusion and in the fight to narrow the digital gap. From the point of view of citizen training, the administrations must promote actions designed to increase basic skills in ICT, centring their efforts on reaching the social groups with greatest risk of exclusion.

The Role of the Administration

(Mila Gasco, Senior Analyst of the International Institute of Governability[20])

[…] State participation is essential, insofar as the transition to a new economy cannot be driven by the market only, as there exists the risk of increasing social inequalities and creating new forms of exclusion.

"*In recent years citizens, businesses and the society in general are exerting pressure for more transparent, more responsible governments, and more receptive public administrations. Motivated by this interest, various governments are exploring the possibilities offered by the information and communications technologies to construct a higher-quality democracy, transform the administration profoundly and make the civil society more responsible with its public commitments. These technologies, particularly Internet, promise to be excellent instruments for achieving better governance, for combating social exclusion and improving public life. Technology opens new opportunities and creates great expectations.*"

Lopez y Leal (2002)[21]

The technological advances of the last decades are the main motive for the astonishing wave of riches and wellbeing in the rich countries of the world. Electronic commerce and the applications of information and communications technologies (ICT's) have become powerful motors for economic growth and productivity increases, and are transforming the structure of the world in which we live. Given this situation, it is incumbent upon the different actors to implement effective action to facilitate the access of a given community to the knowledge society. From our point of view, it is the job of the public administration to play the role of iniciator and facilitator in leading the process. But how are they to go about playing this role?

The government and the administration can be both subject and object in the adaptation of information and knowledge technologies and the quality of an information and knowledge infrastructure (IIC).

As subject, the role of the government and the administration is crucial due to their influence in the creation of a regulatory framework for telecommunications which encourages competition and facilitates access to the technologies for citizens. It's also important for the formulation of measures which foment security and reinforce the confidence necessary for electronic transactions, in the generation of conditions which permit other actors to participate in the new scenario or in the establishment of guarantees for minimum public access, especially that of groups with important economic, geographic or social difficulties. These actions are fundamental in guaranteeing the so-called e-inclusion and the narrowing of the digital gap within countries, particularly the assurance of equality of conditions regardless of social origins or income levels.

As object, the government and administration participate in the opportunities which offer the new technologies, integrating them into their procedures and objectives in order to gain efficiency and political legitimacy. This integration, in turn, can respond to internal procedures

[20] The International Institute of Governability of Catalunya (IIGC), is a public research and formation center, under the auspices of the Generalitat de Catalunya, the Universitat Oberta de Catalunya (UOC), and the Escuela Superior de Administracion y Direccion de Empresas (ESADE), making up a non-profit company for the production of knowledge resources in the field of governability and human development. Its work is based on the intensive use of information and communications technologies for the generation and management of networks and virtual communities.

[21] LOPEZ CAMPS, J. y LEAL FERNÁNDEZ, I. *E-gobierno. Governing in the Knowledge Society*. Bilbao (España): Instituto Vasco de Administracion Pública, 2002.

and objectives of the administration and the government—or the connection between them—or to the relations between administration and government and those who are administered or governed. It is precisely in this second context where electronic government initiatives fit in. By "electronic government" we are referring to all of those activities based in modern information and communications technologies (in particular, Internet) which the state develops in order to increase the efficiency of the public administration, improve services offered to the citizens and provide government actions in a much more transparent setting than the current one. In this context the administration transforms itself into a model user of the new technologies and acts as a catalyst for development and innovation in the use of these tools.

State participation is essential, insofar as the transition to a new economy cannot be driven by the market only, as there exists the risk of increasing social inequalities and creating new forms of exclusion. In this sense the government and the administration, both in their role as subject and that of object of the adaptation to new technologies, should be capable of leading the process and formulating key public policies to favour the adequate development of the so-called information and knowledge society.

GNU/LinEx (Open Source Software)

(Council of Education, Science and Technology, Junta de Extremadura)

[…] We have designed an open source software for use in the educational field, but we also offer it freely to all citizens for private or business use. It is a key factor in that technological literacy campaign which has one single objective: assure universal access to the whole of society, with no discrimination for any reason.

Extremadura is determined not to miss the train to the technological revolution. Their strategic project of access to the information society based on the unrenounceable principles of connectivity and technological literacy, has as its objective the improvement of the quality of life of all the people of Extremadura in a framework of equality and freedom. The region has installed a potent communications infrastructure, the Regional Intranet, capable of linking via a wideband system more than 1,400 points distributed throughout the 383 municipalities of the Autonomous Community. They have also set in motion programs of educative and socio-economic characters. It was clear from the outset that the new technologies of information and communication could contribute decisively to the improvement of the quality of teaching in the region. No time was lost in planning and beginning work on the deployment of the Education Technology Network (Red Tecnologica Educativa) which foresees providing one computer for every two students in the secondary schools. A Technological Literacy Plan (Plan de Alfabetizacion Tecnologica) was also developed which does not forget the necessities of sectors of the population which arrived late to the new technological world. The 33 New Knowledge Centres (Nuevos Centros del Conocimiento) distributed across the region, with special emphasis on rural areas, give special support to these late arrivals. Then there is Vivernet, a virtual business incubator for companies of the new digital era, or the Centre for the Promotion of New Initiatives (Centro de Fomento de Nuevas Iniciativas), responsible for the redirection of Extremadura's strategy for the Information Society, according to the changing realities of the ICT world.

The transverse base of all this activity is the LinEx Project (programas libres/free software) born in response to the necessity for a software environment which could guarantee the ongoing success of projects and programs, avoiding the traps of proprietary software, capable of escaping any sort of public control.

Context – Socio-Economic Characteristics of Extremadura.

Extremadura is an autonomous region situated in the west of Spain on the Portuguese border, in the centre of a triangle formed by Madrid, Seville and Lisbon.

Extremadura has an extension of 41,634 km2 and a population of 1,073,574 inhabitants, which yields a population density of 25.78 inhabitants per km2. The territory of the region amounts to 8.3% of Spain's total land area, and the population 2.6 % of the Spanish total. The population is distributed among 383 municipalities and only the city of Badajoz (136,319 inhabitants) surpasses 100,000 inhabitants. Fifty-seven per cent of Extremeños reside in towns and villages of fewer than 10,000 inhabitants. The second city in number of inhabitants is Cáceres, with 82,034, and the third is the capital of the autonomous region, Mérida, with 51,056.

The economy of Extremadura has evolved favourably in recent years. It is the Spanish autonomous community which has achieved the highest level of convergence relative to the European Union in the period 1985-1999. Extremadura has taken advantage of the European

Union Cohesion Funds to articulate various projects in education, social services and the private sector. These projects, under the premise of incorporating the region into the New Technologies and Knowledge revolution, are propitiating development of this revolution in conditions of equality and freedom, and enabling it to affront whatever changes may present themselves in the future of the Knowledge Revolution.

Antecedents. GNU/LinEx (Programas libres - Free Software) forms part of a process...

Gone are the days when the mere fact of discovering something meant a licence to exploit them in a speculative and abusive manner, as has been the case in the industrial era. It was necessary to seek or create a new model defined by us, not imposed on us, which, adapted to the digital era we live in, would permit the development of all the people of Extremadura. The key to the solution has been to think and act in terms of the age of knowledge.

The Council of Education, Science and Technology of Extremadura's regional government (Junta de Extremadura) understands that the best policy consists in the application of technological innovation for the promotion of freedom and equality of their citizens, taking advantage of and putting at the disposal of all, something which is nobody's private patrimony: the knowledge accumulated by humanity throughout history.

The information society must be built as a collective project; this is the basis of the thinking of the Junta, which is neither casual nor coincidental. In 1998 the President of the Junta de Extremadura, Juan Carlos Rodríguez Ibarra, challenged the people of the region to join the information society, with the commitment not to leave anyone out of the project. We were not prepared to lose the first train to development which it was possible for Extremadura to catch, after missing all the others. We initiated a strategic project for the incorporation into the information society based on two essential principles: to provide the necessary connectivity and offer technological literacy training to all the citizens of Extremadura, regardless of the place in which they live.

This global project for the development of the information society seeks to promote the use of the NIST among all citizens of the region, taking advantage of their possibilities in every sense, especially in the fields of training and the generation of businesses which would contribute to an improvement of the quality of life of the Extremeños.

The consolidation of the different aspects of this global project, both in the education field and in the support of the creation of businesses based on new technologies, or promoting an ambitious plan of technological training, led the regional government to a stark realization: the possibilities of success of the entire program depended excessively on an external element: the software utilized to propel the machine. It was this situation which inspired the creation of GNU/LinEx: the necessity to have open-source software (free software) which would permit the execution of the project, software subject to the complete control of public institutions, and this was only possible using open-source programs.

GNU/LinEx (programas libres-free software), therefore, is not the result of coincidence or of spontaneous generation, rather the logical answer to a dual objective: firstly, an educational goal to contribute to the development of the Education Technology Network (Red Tecnologica Educativa), by achieving a ratio of one computer for each two students in all the classrooms of the region; secondly, a social and economic objective: the dissemination of free software throughout Extremadura, through the Plan for Technological Training (Plan de Alfabetizacion Tecnologica), the small and medium-sized companies and the administration itself. The existence of a complete set of software, which can be legally copied, contributes to the demolition of economic barriers such as the high cost of software licences. The lifting of these barriers is already yielding benefits to the first companies which have discovered the business

possibilities inherent in free software. This is the case of Megasoft System, a computer wholesaler in Extremadura which has become the first firm to commercialise computers with the LinEx operating system preinstalled, as opposed to the customary proprietary software. The company passes on the savings in software licences directly to clients, thereby gaining a competitive advantage in the marketplace. The growing popularity of this type of software has also encouraged firms such as OKI to develop printer drivers specifically for LinEx.

For the public administration the independence and savings which the GNU/LinEx software offers is also significant. The Council of Education, Science and Technology of the Junta de Extremadura calculates, for example, a savings of almost 48,000 euros with the migration to free software of all of the computers of each one of its administrative units. This is the cost of the licences for the necessary proprietary software to run a typical office installation of 22 computers.

The advantages of free programs for the development of the electronic administration are overwhelming. The Junta de Andalucía considered them such when, in mid-April, 2003, it decided to seal a collaboration agreement with Extremadura "for the use and diffusion of open-source software and LinEx in particular" signed by the autonomic presidents of Extremadura and Andalucía, Juan Carlos Rodríguez Ibarra and Manuel Chaves, respectively. The signatories of the agreement explained that it contributed to the backing of a European alternative in the software market already formulated but which from now on will enjoy the institutional backing of not only one, but two regions which total 10 million inhabitants and a considerable number of potential users.

The alternative represented by free software is becoming more and more popular, thus fortifying its image of solvency in the business world. This has given rise to the creation of two free software users' associations, Gulex and Shinuh, as well as the first Association of Businesses users of LinEx in Extremadura, which presented its project program during the celebration of the I Education and New Technologies Salon at the beginning of April, 2003 in the FEVAL trade fair center in the town of Don Benito.

Realities. Necessity for a Communications Infrastructure

With the liberalization of telecommunications markets in Europe, Extremadura found itself in a risk situation, since it became very unprofitable to extend wideband infrastructures to the small towns and villages where the majority of Extremadura's population lives.

There are two basic objectives:

1º To assure the access of all of Extremadura's citizens to the infrastructures and services of the Information Society,

2º To promote the technological training of the entire population, both in urban and rural settings.

The backbone of the project has been the contracting of a corporate network of the Junta de Extremadura (2 Mgb/s minimum in more than 1,400 points) which we refer to as the "Regional Intranet", and which is the first of its kind in Europe, insofar is it includes all the offices of the regional government in all parts of the region (schools, middle schools, health centres, administrative offices, hospitals, employment offices, etc.)

By assuring wideband connections to all of the schools of Extremadura (including even the smallest) the Junta has provided infrastructures which would have taken much longer to be deployed if left to market impulse alone, or never would have arrived at all.

Formation of Critical Citizens in the Information Society

To improve the quality of teaching: this objective led the Council of Education, Cience and Technology to incorporate the Information Society into Extremadura's education system, with the Technological Network of Extremadura (RTE).

The principal pillars in the project have been training, the generation of content by teachers and professors themselves, the adaptation of the architecture of new schools constructed by the autonomic government and the creation of their own free operating system.

The training courses en NTIC have been given throughout the region, carried out principally by the personnel of the Centers of Professors and Resources (CPR). These courses, both live and "online", have reached 80% of Extremadura's teachers and professors since they began in 1999.

Obviously, after the presentation of GNU/LinEx, training is based on this operating system, both giving a basic working knowledge of the software and to explore its teaching possibilities: image treatment, multimedia…

The educative value of free software such as GNU/LinEx is remarkable, with work done over Internet among persons who are physically separated but united by a powerful collaborative spirit. The very notion that one is working with a computer thanks to the fact that there is a team of people collaborating and sharing their knowledge has a tremendous educational value.

Taking further advantage of the communications possibilities offer by Internet, an education portal has been created (www.extremadurasi.org) which serves as a reference for the educational community; through this portal teachers and professors can freely share content which they, themselves, have created.

The generation of this class content is supported, as well, by direct economic support and the establishment of prizes for the elaboration of curricular material.

In the field of infrastructures, the Council of Education, Science and Technology, after assuming competence in the field of education, has enlarged the network of centres, keeping in mind always the use of new technologies. The dimensions of the new classrooms are larger than traditional ones so as to include in ALL classrooms special tables designed for two students and one computer.

The necessity to achieve perfect control over the vast computer installations created by the deployment of the RTE, to seek a stable and potent operating system for networked operations, and to be able to count on software susceptible of being updated without relying upon outside vendors, and the minimum costs, led the Council of Education, Science and Technology to place their money on the free, open-source operating system, GNU/LinEx, which is the only system installed in all the newly created education centers.

The software used for the management of the educational email system is also totally free, as is the program used for web hosting for the CPR.

The key factor in this program of computer literacy is a free software which we have designed ourselves for use in our education system, but which we also make available to all citizens for their private or business use. Our only objective in this is to assure universal access to the citizens without discrimination for any reason. This plan is being carried out through the Technological Training Plan (Plan de Alfabetizacion Tecnologica,PAT) of Extremadura, which was born in May, 1999 as an initiative of the Council of Education, Science and Technology of

the Junta de Extremadura and the Regional Association of Popular Universities (AUPEX), along with a variety of town halls and other collaborating entities.

This process of technological literacy training in Extremadura has given rise to a model of centres, coordinated with the plan designed by the regional government for the generalized training of the adult population: the so-called New Knowldege Centers (Nuevos Centros del Conocimiento), popularly known as NCC's. Currently there are 33 centres distributed throughout the region, principally in rural zones distant from the cities, and in less-favoured urban areas as a measure for achieving social and cultural integration.

In these physical and virtual spaces, citizens and organizations interact in concrete projects based on the interests and the demand of the citizens of Extremadura, thus becoming centres for a la carte technological training, while promoting social and cultural participation of the people of Extremadura.

The PAT not only offers training to all sectors of the population (older people, young people, women, professionals, students, etc.) but is actively concerned with putting Information and Communications Technologies within reach of all the citizens.

Since the presentation of GNU/LinEx, all the centres involved in the development of the Technological Literacy Plan (PAT) utilize the GNU/LinEx operating system, which has not given any problems thus far. Worthy of note is the elevated number of older people who learn to use computers and to navigate the Internet, which demonstrates that the fear of open systems is totally unjustified.

Difusion de GNU/LinEx (Programas libres - Free Software).

"Be legal, Copy LinEx." More than a slogan it's a declaration of principles. GNU/LinEx was born to extend throughout the entire society of Extremadura and, in general, anyone who asks for it. For this reason, ever since its presentation it has been distributed massively via copies on CD's and downloaded from www.linex.org -or from one of its many mirror sites – or through the regional press or specialized magazines.

On the one hand, the regional government (Junta de Extremadura) promotes a reflection on the subject of open-source software. Many personalities and collectives of unquestioned worldwide prestige have participated in various events staged by the autonomic administration of Extremadura. Among them are Jesús González Barahona, Richard Stallaman, Miguel de Icaza, Hispalinux, Gulex, José Mª Olmo...

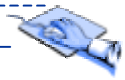
Distribution-Creation of the Portal "www.linex.org, for Freedom"

The portal "www.linex.org, for freedom" is one of the basic elements in the integration of GNU/LinEx in Extremadura society and all those who want to access the site from anywhere in the world.

As a first objective, the site defines precisely what GNU/LinEx contains at the same time as it permits the evolution of the operating system. In any other way, given the large number of free operating system versions, it would be practically impossible to provide technical support to all of them. Any GNU/LinEx user can find technical support in the portal which always coincides with what he is seeing on his computer monitor.

There is, of course, an FAQ section. Nevertheless, one of the best contributions of the Junta de Extremadura is making to the cause of free software is the possibility to update GNU/LinEx via their portal with a simple mouse click. This possibility underlines the determination which Extremadura has in reducing the digital gap. We understand software as knowledge and consider, therefore, that it should be shared by everyone.

The portal also has an informative function: to become the current reference on the subject of free software in particular and the Information Society in general both in Extremadura and in the wider world. This also has a social function: to become the virtual meeting place for users of GNU/LinEx.



3.6. e-learning

On the subject of education and learning in the Information Society, we must distinguish at least two concepts: one is **basic training in ICT** and the other is **electronic learning (e-formation o e-learning).** Both concepts can contribute to an extension and improvement of the overall quality of learning.

Basic training in ICT is that which makes possible the use of the tools of the Information Society and opens the doors to all of its services: electronic administration, e-commerce, electronic learning, etc.

E-learning is a teaching model which the ICT use a the principal tool for imparting knowledge, in clear contrast with traditional teaching, based on in-person models, which can be complemented and reinforced by e-learning, thus creating new forms of learning.

Both concepts, basic technology training and electronic learning, are closely related, since, without the first, it is very difficult to accede to the second. That is to say, if one doesn't know how to used the tools or the platforms necessary to access electronic learning one can hardly make use of it. For that reason, it is not enough to have one or more computers connected to Internet to be able to call that installation a "centre of electronic learning." For this to be a reality, students and teachers must undergo a minimum of previous training and have at their disposal the appropriate educational material and software.

Thus, from the point of view of acquisition of capacities, the first of the two concepts has short and medium-term vision (the ability to use the ICT's) while the second deals with objectives in the medium-long term (e-learning). So electronic learning is both a barrier and a catalyst for the development of the Information Society. The more extended the basic training in ICT, more extended and better will be the access to the Information Society, permitting ever more learning experiences which yield more extended benefits.

The basic training necessary to take advantage of e-learning opportunities should go beyond the tools stage to include as well other key activities for the exploiting e-learning, such as the knowledge of the possibilities of use of the ICT, the confidence in the tolls, the conditions of security and, above all, the incorporation of the Information Society in daily life. The more we do to instil in our citizens the fact that the Information Society is an instrument for constructive change, the greater will be the payback obtained in economic and social terms.

In recent years, great importance is being given to mixed methodologies as guarantees of training success. This, which in developed countries, usually means a mix on online formation and live sessions. If we translate the phenomenon to developing countries it lends itself to a different interpretation: people with basic training in ICT and a minimum of preparation, receive online training and then pass it on in person to other people, practically a technological copy of the traditional each-one-teach-one literacy programs used in Africa previously.

However, the extension of e-learning techniques often runs up against an important obstacle: illiteracy. Clearly, many e-learning models prevalent in developed countries cannot be transferred to other countries where indices of illiteracy are much higher. Nevertheless, there are forms of working around this limitation, using alternative platforms to Internet, for example, education through radio or interactive television. Or, as we pointed out in the previous paragraph, if a few persons can be sufficiently trained, they can pass the knowledge on to their countrymen in traditional ways.

Training Without Distances

(Francisco García García, Director of the National Center for Educative Information and Communication[22] (CNICE) and Carlos Mayordomo Mayorga, Chief of the Open Training Service (CNICE))

[…] One can begin learning on any given day, with the help of a person, a tutor who, wherever he may be located, will meet the student and give him or her the learning support they need. It is true that a computer is necessary, with its vast set of data, structured contents, learning tools, etc. but it is, nonetheless, capable of putting two persons in contact: one with the desire to learn and the other who wants to assist her learning process and who may well learn something from the interaction with the student. This e-learning system, after all, invites us all to become both students and teachers.

Internet and Ongoing Learning

In a very few years we have undergone a process in which technology has infiltrated all fields of human activity. In the case of Internet with its structure of user-friendly websites, the time frame is reduced to a mere decade. The value and importance of Internet is now understood by the majority of the population, but how many of them actually use the Web? How many of them take advantage of Internet to resolve real problems in their lives, whether of a personal or professional nature, whether access to information, training, etc.? The answer varies depending upon each country and its economic and cultural development. Nevertheless, even in the most developed countries, modern communications don't always reach all sectors of the population, rather they are concentrated in certain socio-economic groups, an age range, certain places and even by gender. Men tend to use Internet more than women.

Educational institutions are obliged to find new scenarios for the advancement of education systems. Internet is a source of informative, formative and communications resources which can be used both for regulated in-person education and the ongoing training of citizens. But the current distribution of Internet use, from the domestic point of view, seems to question the model, since access, especially in developed countries, is restricted for a large part of the population. For all of the above reasons it is necessary to adopt models of shared Internet access which assure that no citizens are excluded from its potential.

The irruption of Internet in the field of education is practically all enveloping, but one of the areas which can benefit most is that of ongoing training throughout the citizen's entire life, understood in the broadest sense. A first objective might be considered the access to a job, once having acquired the necessary knowledge and skills, for "updating" in one's profession and for the promotion of economic and social development, both at local and national levels. We must not forget, however, aspects which, though not in demand at this moment, can be important future options: learning as a form of personal development. This is learning for the love of learning, converting the global village in a source of global knowledge. Global and at the same time differentiated. That is to say, from Spain one can learn the Guaraní language, or from Nicaragua, Catalan.

[22] The National Center for Educative Information and Communication (Ministerio de Educacion, Cultura y Deporte), which includes both the Program of New Information and Communications Technologies and the Center for Innovation and Development of Distance Learning, has the responsibility of incorporating Spain's educational institutions into the information society by means of the diffusion and promotion of new information and communication technologies applied to education, as well as the development of other forms of "tele-education" through the adaptation of new technologies for advanced programs of distance education.

From the methodological point of view the traditional "correspondence course" has been overtaken by new models and strategies. There no longer exists a certain necessary, obligatory place reserved for learning and culture, there are no longer schedules nor hours. And in the most flexible systems, as we shall see, there are not even beginning nor endings to learning projects. On any given day one can begin to learn with the assistance of a person, a tutor who, wherever he or she may be, meets the student in order to facilitate his or her learning process. It is true that a computer is necessary, with its vast set of data, structured contents, learning tools, etc. But it is, nonetheless, capable of putting two persons in contact: one with the desire to learn and the other who wants to assist her learning process and who may well learn something from the interaction with the student. This e-learning system, after all, invites us all to become both students and teachers.

The seemingly miraculous billions of pages, information, contacts and services which one finds in Internet are there for a variety of motives. There are business motives, institutional content, shared interests, etc. Even so, Internet has shown its potential for uniting information from many different places and points of view, and putting it at the disposal of the entire world.

Public education institutions dedicate great effort, both in economic and human terms, to the generation of content, expert personnel, and strategies which, due to the current level of connectivity, can be shared with educational institutions from other countries. Contributions from different zones of an increasingly smaller planet can enrich us all... with knowledge.

Mentor Classroom: Formation Without Distances

Mentor Classroom (Aula Mentor) is a system of training over Internet which works on the following suppositions:

➘ *It is directed to adults (over 16) outside of the school system*
➘ *It is informal education aimed at professional advancement or improvement of quality of life.*
➘ *There are more than 70 courses available in the following areas:*
- *Introduction to ICT*
- *Professional office automation*
- *Advanced information technology (PHP, SQL...)*
- *Professional advancement (Small Business Management, Rural Tourism...)*
- *Quality of Life (Nutrition, Prevention of Drug Dependencies, Art...)*

➘ *It is flexible. The registration in all courses is permanently open and the duration of the courses is decided by the students themselves.*
➘ *The system has its own Web server with educational tools (evaluation, materials, practice, etc.) and offline material (CD's or printed material).*
➘ *The tutors are experts in the content of their respective courses and, through Internet, they attend daily tutorials from their homes. They monitor the student's learning pace, correct his practice exercises, advising on the recuperation of the gaps in his knowledge or providing extra documentation, beyond that of the course.*
➘ *Classrooms are equipped with computer equipment and software which permit students who don't have computers at home or who are not yet minimally computer literate to participate. This guarantees the all segments of the population can participate freely. While 25% of the participants are university students, another 25*

% have only completed primary school. The students who have their own computers can take the courses from home or elsewhere

- *The classrooms are attended by an administrator who guides the students, not in matters of content, but in the use of the hardware.*
- *The classrooms are created in collaboration with MECD through agreements with other institutions (CCCAA, town halls, ONG's or Latin American Education Ministries.)*
- *Students pay a symbolic sum of money each month (5 to 21 €, depending upon the country) which offsets the costs of the telematic tutoring and part of the costs of the classrooms, so that the system can be sustainable despite ongoing growth.*
- *The students' work is corrected by the tutor and, once the student has completed the course he or she is authorized to sit in person for a final examination in which the student's level of knowledge and abilities are evaluated. Only after pass this examination do students receive a diploma from MECD and the collaborating institution.*

The Origens:

In 1992 the CNICE (previously PNTIC) wanted to experiment with the educational possibilities of communications through computers. Several experiences had already been carried out around the world, but basically they were based on postgraduate studies. In this case the intention was that the training be available to all citizens and for that reason they took special care that both the study material and the computer systems were as user friendly as possible. The design objectives were the following:

- *To extend open, flexible and non-regulated distance learning to populations resident in areas of limited learning possibilities*
- *To explore distance learning scenarios based on ICT*
- *To impulse local development in collaboration with other institutions.*

To do so they selected 18 villages where they created classrooms in collaboration with the town halls and initiated the following activities:

- *Training of classroom monitors in technology and methodology*
- *Creation of content for the various courses with special care in the sequence of the materials and, particularly the subjects (accounting, nutrition, electronics, computer basics, auto edition, rural tourism, etc.)*
- *Design and development of tools and processes of telematic tutoring*
- *Selection and training of tutors*

In the year 1993 the distance learning project was formally started. Two years later an external evaluation was carried out, with the following conclusions:

- *The greatest advantage perceived by the students was the flexibility, which permitted students of different levels o with long periods of inactivity to complete the courses successfully.*
- *The contact with ICT, through working with telematic communications systems, even though the course was not strictly related to computer science.*
- *The excellence of telematic learning systems*
- *The importance of the classroom administrator as learning helper.*

Development and Growth:

This experience has continued to grow and evolve day by day with the contributions of a great network of people who, from many different places, contribute their work and their ideas. The number of students, classrooms and

courses increase each year. More than 55,000 students have participated since 1993, 19,000 of them just in the last year. What seemed, in its beginnings, to be a way of enhancing educational possibilities in small rural populations has converted itself into an important alternative for students in large cities, as well.

It is an extensive and disperse network which requires elements of coordination and, above all, a constant flux of information and training. In order for everything to function properly there is a constant electronic communication among all of those implicated in the project, systems of debate and participation, as well as constant evaluation which permits each participant to evaluate the students in different aspects of their work. Tools and materials are also periodically reviewed. At the same time, evolution and growth have induced some modifications in the initial program, though the guiding philosophy remains constant:

- *All processes of training personnel (administrators and tutors) are carried out at a distance*
- *The training and management platform is constantly modified as a function of the necessities detected and suggestions received from the participants.*
- *The students contribute economically to the system. This is a form of taking the program to more students, but it also encourages them to take their studies seriously.*
- *Part of the decision-making process has been transferred, thereby decentralizing part of the activity.*

Lessons Learned:

After 10 years of experience in the program, and with a sizeable structure in place, we have arrived at some conclusions regarding this training model:

- *These programs should not try to ape live education models, rather let distance learning and technological tools create a new space for powerful new learning opportunities which we can exploit.*
- *Internet permits a program to incorporate tools with tremendous educational power at low cost, without the necessity to spend large amounts of money to get started.*
- *It is important to adapt to the daily reality, and to the necessities of students, classrooms and tutors.*
- *Teachers and experts in learning methodology should configure the setting, define the learning model and describe the technology necessary to achieve the objectives, never the contrary.*
- *The student is the principal objective/beneficiary, and for this reason it is necessary to establish precise participation and evaluation standards in order to improve the system constantly.*
- *Presentation formats have to be researched and tested. Different contents require, at times, different formats.*
- *The management of such flexible systems which are generated by many different institutions is a complex business. For this reason it is necessary to establish transparent management mechanisms and which offer immediate information by sectors.*

International Cooperation:

Throughout recent years the MECD has established a set of international cooperation plans with various Latin American countries. As a complement to these plans, steps are being taken for the development of projects similar to the Mentor Classroom in other countries. At this time there are classrooms in Nicaragua, Honduras, the Dominican Republic and Paraguay.

The working plan for other countries is structured in the following way::

- *Initial contact and creation of collaboration plans, agreement on the number of classrooms, students and staff*
- *Hands-on training for administrators*
- *Distance training for administrators*
- *Creation of pilot classrooms and first experiences with students; evaluation of the experience*
- *Distance training of local tutors and elaboration of the interchange mechanisms. There is never any economic interchange between countries, rather a mechanism based on tutorial barter.*
- *Adaptation of teaching materials to the reality of the country in question*
- *Assistance in the creation of country-specific teaching materials*
- *Development of the training and management platform*
- *Autonomous operation with interchange of material between both countries.*

The objective is to develop similar experiences in public and non-profit institutions in other countries and to establish collaboration strategies which permit joint development of content, resources and strategies capable of reaching a maximum number of citizens. The arrival of Internet has greatly favoured these cooperation strategies, insofar as it has facilitated the delivery of information anywhere in the world. We are working towards the sharing of learning experiences.

The Information Society, an Open Door to Learning

(Ana Moreno,Associate Director of Enred Consulting[23])

[…] The ICT's permit us to supersede traditional learning paradigms and seek new solutions capable of democratising access to knowledge, the pillar of any development policy.

There is a wide debate as to how to best enlist the ICT's in the cause of training programs which are regulated, occupational and ongoing. The e-learning platforms offer great flexibility: in space, time, number of participants, starting knowledge level, content format, tutorial supervision and group work... These advantages permit us to complement and, on occasion, substitute the traditional schemes of live learning. The role of e-learning in the updating of knowledge in a changing setting is unquestionable. It is the backbone of any scheme of knowledge management in organizations.

Nevertheless, the debate which revolves around e-learning, not as an extension of traditional learning, but as the seed of a learning program for places where there is no learning offer at all, or where it is poor and insufficient, is less common. The ICT's permit us to supersede traditional learning paradigms and seek new solutions capable of democratising access to knowledge, the pillar of any development policy.

As the Millennium Declaration has indicated on the subject of achieving a sustained development, "experience confirms some fundamental truths: growth is a necessity, though it's not enough, to reduce poverty and income disparity. The surest way to achieve growth is the effective participation in the world economy. But this should be combined with effective social policies: educational progress for everyone, health services for all, and equality of the sexes. The foundation for success remains good government. To achieve it requires external support."

If we analyse these fundamental truths, we find throughout the declaration multiple references to the underlying challenges of formation-information:

- "Education is the key to the new global economy..." professionals of all countries must be well prepared throughout their working lives; it's not simply a question of providing primary education to the 130 million children who currently need it in developing countries.
- "We must give young people the means to protect themselves from AIDS, providing them with information and creating a favourable social setting which tends to make them less vulnerable to the infection…" Information-awareness-formation is one of the pillars of preventative medicine.
- "Experience shows again and again that investment in the education of girls is rapidly transformed into better nutrition for the whole family, better health attention, lowered birth rates, reduction of poverty and better economic performance in general..." Thus, reading, writing and arithmetic are only a part of development-oriented learning. Other subjects such as health, nutrition and birth control are subjects with an immediate payback.
- "Efficient states are needed and it is therefore necessary to strengthen the capacity of these states. We must also adapt international institutions… to the new era." Is there any

[23] ENRED Consulting is a Spanish consulting firm dedicated internationally to the creation of alternatives and to the design and execution of projects related to European construction, employment and economic development, equality of opportunities and the information society.

other hope for the management of institutional changes besides shared learning and a major training effort for public employees?

- ➔ "Companies which operate at the worldwide level occupy a decisive place... Their right to operate globally has been considerably enhanced through international agreements and national policies, but these rights should be accompanied by greater responsibilities, by the theory and practice of proper civic behaviour in countries around the world." Should a fundamental part of this ethical commitment be the practice of sharing knowledge with the countries in which they operate? Should the human resources policies of the multinationals be oriented towards the formation and enhancement of local professionals?

Within the wide gamma of knowledge necessities, perhaps the easiest thing is to open the playing field to e-learning. It is not difficult to imagine:

- ➔ E-learning programs for strengthening institutions, consisting of virtual communities in which experts from each country share experiences and best practices with their colleagues
- ➔ Extension of e-learning programs and knowledge management from multinationals to universities, schools and institutions in developing countries where they operate, as a part of their social commitment.
- ➔ Patronage schemes – online sponsorship on the part of the elite professionals within a country for incipient economic initiatives in less-favoured zones of that same country, with programs of content generation in their own language and adapted to local culture.
- ➔ Local centres of awareness-information-formation in health, hygiene, child care, home comfort, birth control, all centred in a single access point (PC, TV, radio) and activated by the local community
- ➔ Schools with a lack of teaching materials and storage systems, which complement their teaching resources with "online academic resource centres"

E-learning has extended the limits of traditional learning systems. The areas of knowledge which are already almost fully digitalized are manifold; the cost of sharing a large part of that knowledge is minimal; the localization of that knowledge in any point on the planet is immediate, the access to experts to complement the online materials is not subject to limitations of time nor space.

E-learning's great challenge resides in the fact that it requires a greater effort from the student than in-person educational systems. Learning motivation must be keen and the parallel socialization processes must be reinvented. In order for the new learning models to take root, programs must focus clearly on "the necessities of the students." The "Voices of the People" survey concluded that the most important things in life are good health, family life and employment. Are these then the "killer applications" for e-learning for development? What is certain is that, once e-learning takes off, the young people of the world, led by the billion of them who are between the ages of 15 and 24, will reinvent its uses and multiply its benefits.

The e-learning-for-development debate cannot be brought to a close without listening to the "realists." You cannot have Internet nor television without electricity. It's not easy to cable the entire planet, and satellites are expensive. Access points will not be sustainable without computer specialists, authors' rights are a priority in the Information Society... History's first films were practically theatre filmed for the screen; since then the seventh art has reinvented itself each day and movies like Star Wars, Toy Story, Shrek or Matrix, projects in which human creativity and technology walk hand in hand, are the best models for overcoming old paradigms.

India and the Information Revolution

No developing country has benefited more from the digital revolution than India, which has a software industry scheduled to multiply itself by eight and reach 85 billion dollars in sales by the year 2008. This industry has generated a great deal of employment and wealth and has created a new class of businessmen in the field of advanced technology. The value of an Indian company, Infosys Technologies, has duplicated since it was first listed on the Nasdaq in March of 1999.

The Indian software revolution has been accelerated by foreign investments and helped by the liberalization of the economy and by the creation, with government support, of technology parks. India has also produced a great number of computer science professionals who work throughout the world.

Indian companies have taken their places among the world's leaders in the creation of portals and Web-based applications, and have managed to overcome bureaucratic backwardness and antiquated infrastructures, building their own telecommunications systems and delivering their software via satellite to the entire world. Internet access is also growing rapidly in India; it is estimated that some six million persons will be using it in the year 2001, thanks for the liberalization of the telecommunications sector and information technology.

Withal, India, the same as other countries, is still affected by the information technology gap. All over the country there remains an immense breach between those who participate in the Internet revolution and those who are left by the way. As they approached the 50th anniversary of India's republican constitution, the president pointed out that his country has "one of the world's greatest reserves of technical personnel, but also the greatest number of illiterates, the greatest number of people who live below the poverty level and the greatest number of undernourished children."

The success which India has demonstrated in the information revolution is directly related to their capacity to form great numbers of highly-trained technicians and scientists. And the information networks established by those professionals can help to extend the benefits of training to their less-fortunate countrymen.

How Can E-learning Really Contribute to Social Inclusion?

(Claudio Dondi, President of SCIENTER ESPAÑA[24])

[…] Although appropriate e-learning programs exist, members of less-favoured social groups tend to lose motivation if they don't receive adequate support which encourages them to express themselves, recognizing the value of their vital experiences and their points of view.

The present debate on information society addresses e-Learning in two main directions:

- How e-Learning contributes to the innovation of education and training systems, making them more accessible, flexible, able to respond to an expected massive increase of lifelong learning demand.

- How e-Learning can contribute to major economic and social objectives that characterise the progression towards an information society.

Within the second stream of thought the issue of social inclusion is probably the most frequently addressed, but no clear answer is really available and progress to date shows that e-Learning is rather in danger of generating new forms of exclusion to learning opportunities because of its request of access to ICT infrastructure. In fact the present users of e-Learning are normally well educated people, employed in large organisations or self-employed professionals who normally know how to make effective use of ICT for their personal and job-related development.

Deprivation of learning opportunities is only one important factor of social exclusion, together with unemployment, poverty, bad health, life in socially-deprived and culturally deprived environments. If we really want to address the issue of access to learning by socially deprived groups, access to infrastructure is definitely not enough:

- Even when a learning centre is accessible, these groups may lack the necessary skills and information to really access learning opportunities, so investment in infrastructure and connectivity should be accompanied (not followed) by appropriate information campaigns and digital literacy programmes;

- Even when access and skills are achieved, it is very likely that the content, language and learning approaches proposed by existing e-learning programmes are not found suitable by these target groups, because they tend to be designed for an "average" or initiated learner, not for people who have limited familiarity with learning autonomously and possibly bad experiences in their previous educational history. A new generation of e-Learning approaches and programmes needs to be designed.

- Even when appropriate e-Learning programmes are available, members of socially deprived target groups will tend to loose motivation if not adequately supported, encouraged to express themselves, recognised for the value of their life experience and points of view. An important effort to create respectful learning environments has to be made if we want the socially deprived groups to appreciate the new learning opportunities that ICT may offer.

[24] SCIENTER España is specialized in innovative training systems, with special reference to the field of Open Distance Training (Formacion Abierta y a Distancia - FAD); organizational learning (the organization which learns); Lifelong Learning and the use of new information and communications technologies in diverse fields, such as professional guidance, social inclusion, local development, superior education and ongoing learning programs.

- Even when an appropriate learning environment is accessible in most cases the socially deprived individuals will not persist in their motivation if they do not feel a sense of community in their learning experience, a community in which they recognise their cultural roots and the appreciation of their identity as a positive element. The role of peer support may result to be very important in this regard.

This apparently pessimistic view on how e-learning can contribute to the social inclusion agenda, within countries and among countries, is in fact trying to overcome simplistic views that ICT access will automatically bring significant progress, and also over-phased approaches that propose "technology and connectivity first, the rest later". In fact it is only through a systemic view on how socially deprived people may be encouraged and motivated to learn that meaningful results can be expected in the medium term.

The easy temptation to direct the first investments to technology purchase should be resisted, since experiences in the developed world show a great amount of cases of computers waiting for years in schools and training organisations before any authentically educational use of them is even planned. The counter productive effects of this lack of systemic and integrated view must not be under estimated.

Technologies, access centres, new contents, new learning approaches, newly conceived support systems, new learning communities should all be available -maybe at a pilot project level to start with- at the same time if any conclusion has to be driven on how much e-Learning contributes to social inclusion. If this is not done, any serious evaluation will conclude in a few years that the contribution is –at best- not so relevant.

E-learning for Development

(Ismael Peña, Director of Campus for Peace[25])

[…] The change of medium obliges us to be creative, and not limit ourselves to the mechanical repetition of the live educational models we have always used.

It is widely agreed that there can be no development without training, at least structurally (that is to say, segregating clearly development projects from specific programs of humanitarian aid). We are talking, then, about training for development, which is gaining increasing relevance in today's cooperation projects. Consequently, we are undertaking ever-more-serious studies on the optimisation of the (scarce) resources available, in order to maximize results.

On the other hand, it is becoming necessary to train experts in the different abilities which they will need to apply in their field work, in the coordination and/or management of campaigns, projects, etc. What is needed, first and foremost, is instrumental training (technical knowledge to be transmitted, skills for project construction, etc.) and training for personal development (relations with other experts and volunteers, knowledge of the socio-economic context, etc.)

Along with these two factors we find the training of trainers, whose positive effects make it a top priority in any program of training for development. This includes its adaptation to the unique necessities of local development in the destination community, economy of scale, etc.

We feel that the construction of an effective shared learning space depends upon the following factors:

- *Accessibility*. We must guarantee access to training to everyone, taking it to the home of each student, in order to break down the barriers of space and time, as well as, in the immediate future, language.
- *Learning Model.* We must work for the improvement of learning models applied to new media such as applications in the virtual world. This change of medium obliges us to be creative, and not limit ourselves to the mechanical repetition of the live educational models we have always used.
- *Teaching Models*. The profiles of teaching professionals must change in the sense that teachers must become more facilitators than instructors. The teacher is integrated into the model at the same level as the student and the educational materials, thanks to technology, but in a different role which we must work to analyse and perfect.
- *Cultural and Organizational Style*. One of the great challenges of globalisation is that of situating oneself without losing one's identity, not just in the cultural aspect, but also in the essence of the mission or the philosophy of the institution. We must creatively use the mechanisms necessary to introduce cultural and organizational elements associated with institutions of network learning. We must do this in the global environment, so as to impart to it the richness of diversity as well as lending significance to the participation of all who work in this space.
- *Interculturalism*. The possibility of relating different cultures in the network is already a functioning reality. The challenge will be to convert a space which, from the outset, encourages participation, irrespective of a person's cultural or racial origin in a rich, diverse, tolerant and non-uniformizing space. If we tend towards the uniformization of

[25] The Campus for Peace (C4P) is a development cooperation program of the Universitat Oberta de Catalunya (UOC) through which the institution plays a role as an agent of cooperation, contributing knowledge, resources and technical capacities and coordinating, channelling and supporting the activity of the university community on cooperation and solidarity issues, in keeping with their ethical commitment to society.

globalisation we will create a fictitious space in which neither people nor institutions will reveal themselves as they really are, that is to say, diverse.

Within these variables, we can advance rapidly some of the benefits of distance learning:

- A drastic reduction of the unit costs of training as well as the traditional costs of chapters (such as travel, expenses, hotels, etc.)
- The possibility of utilizing non-productive periods for training, both at work and at home
- The personalization of training through the use of individual consultants
- Greater flexibility of training programs, as it is easier to individualize and adapt the teaching staff to flexibility
- The taking advantage of the contributions of new technologies to learning
- The overcoming of travel limitations due to distance or physical limitations of students
- The overcoming of issues of coincidence in time, as the virtual model does not require synchronization
- The economies of scale

The Initiative of the Universitat Oberta de Catalunya: The Campus for Peace

The Campus for Peace, the project of cooperation and solidarity of the Universitat Oberta de Catalunya, puts the new technologies of information and communication at the service of cooperation and its learning processes. These are intended to be a means to an end, a value added, not an end in themselves.

This spirit manifests itself in the promotion of projects which contribute value added to virtualization, self management via virtual communities (based on the Virtual Campus Virtual of the UOC) and/or the design and programming of online courses based on the knowledge and experience which the UOC has in this field.

What the Campus for Peace offers organizations which work in the field of cooperation and solidarity is the following:

- *Spaces in the Campus for Peace intranet (virtual offices), which permit them to:*

• *Manage their organization and their projects via the web, without limitations of time and space*
• *Create virtual communities destined to foment dialogue and debate, as well as web-based work*
• *Create training spaces for the diffusion of organization's information and the training of its members*

- *Guidance and technical support in the elaboration and maintenance of the structure of the virtual offices*

- *Virtual Learning Environments (in general integrated into the virtual office of the organization), which permit them to:*

- *Train their volunteers in instrumental abilities or questions of personal development*
- *Train trainers who can, in turn, replicate and initiate educational initiatives in the communities which are objects of development programs*
- *Train communities in the context of cooperation and development projects*
- *Set in motion educational initiatives which reflect the philosophies of organizations which are interested in solidarity, as well as the socio-economic context which underlies and motivates their activity*

➘ *Consulting and support in the design and implementation of online training programs, both at the technical and pedagogic levels, starting with the very conception of the educational project until the production of the last teaching materials and the training of the different agents implicated in the project*

➘ *Spaces in the Campus for Peace website (www.campusforpeace.org), which permits them to:*

- *Publicize their organization, their activity and the programs which they have under way*
- *Recruit collaborators and volunteers who want to get involved and work in the organization's projects*
- *Contact sponsors who want to finance the organization's projects*
- *Start up virtual projects of cooperation and solidarity*

➘ *Consulting and support in the design and deployment of the organization's websites*

E-learning as a Basis for a Just Social Development in the Most Advanced Countries

(Dra. Yolanda Fernández Jurado and D. Andrés González García, UPCO[26])

[…] The information society needs people qualified in the use of the ICT's and, thanks to specialized courses, many of them based on e-learning, we can help the personnel we contract to adapt to these new technologies. Obviously, we're talking about online courses developed by professionals, since everyone is aware of the number of courses with no serious educational underpinnings which are popping up on the Web, and which are essentially useless to a worker in a precarious situation.

Introduction

Until now, we thought that in order to develop the information society it was enough if we had the three fundamental elements: adequate technology, a legislative context which correctly regulated the new medium and support from public authorities which permitted the liberalisation of certain sectors, especially that of telecommunications, and the fomenting of investment in the technologies necessary to reach that information society.

Nevertheless, experience has demonstrated that we need not invest only in technology, nor create regulations which guarantee the adequate use of technology, nor politicians touting the excellences of the information society. The proper development of the information society requires consideration of the individual differences of each country, both in economic and sociological terms, since not all countries are reacting in the same way to this effort to establish a new milieu based on the generalization of ICT.

It is precisely here, in the context of socio-economic specification of each territory, where the utilization of *e-learning* can be a fundamental factor, clearly necessary to achieve a true consolidation of the information society, both in advanced and less advanced countries.

The Uses of E-learning in Advanced Countries

If we look at the European scene, it is evident that, since the decade of the 90's, Europe has a great interest in fomenting the information society. In the year 2000 the **European Union** declared itself clearly implicated in the vigorous development of the ICT's. To achieve this development it has not only established mechanisms of liberalization and the reduction of costs in the telecommunications sector, but it has also placed it high on the list of priorities enunciated in the Application of General Orientations of Political Economy[27] designed to lay down guidelines for member countries.

While it is true that Europe is betting heavily on ICT in the member countries, in order for the full functioning of the information society to become a reality, **it is necessary to prepare the citizens for an adequate use of these technologies** so as to obtain from them all of the socio-economic benefits which they promise. It is precisely here where *e-learning* can solve some of

[26] Universidad Pontificia Comillas.

[27] See the Communication of the Commission on the Application of General Political Orientations of *2002*. SEC (2003)33. European Communities Commission. Brussels 14 January, 2003. Pages 33-34.

the problems which this rapid process of change towards an information society can provoke, specifically:

1.- The consolidation of the information society demands a clear adjustment in education systems to the new business necessities.[28] As companies go adopting ICT tools in their operations they need personnel capable of using them, and the sooner they learn, the better. Therein lies the interest demonstrated in encouraging the access to and use of Internet, the diversification of access mechanisms, the promotion of public services offered over Internet and, above all, the increase in electronic learning aimed at encouraging private citizens to use Internet for teaching and learning purposes (whether for regulated educational activities, post-graduate courses or courses related to employment seeking).

2.- The current rhythm of technological innovation can produce imbalances in European labour markets which can be attenuated by an adequate system of recycling personnel.[29] The use of ICT changes the importance of certain sectors: it creates jobs in some but also destroys them in others. Above all it affects the degree of obsolescence of workers already employed.[30] The information society needs people qualified in the use of the ICT's and, thanks to specialized courses, many of them based on e-learning, we can help the personnel we contract to adapt to these new technologies. Obviously, we're talking about online courses developed by professionals, since everyone is aware of the number of courses with no serious educational underpinnings which are popping up on the Web, and which are essentially useless to a worker in a precarious situation.

3.- E-*learning* can help people who are unemployed or in a situation of social exclusion or even people who have not been able to work due to family situations. All of these people can be prepared for the new needs of the labour market. The new environment created by the information society permits people who have been excluded until now from the labour market or unemployed, to work. This means greater economic growth in developed countries, as well as a higher level of social wellbeing.[31]

[28] A clear example of this concern can be found in the Action Plan InfoXXI, in the Actions Assigned to the Spanish Ministry of Education, Culture and Sports (from ECDUL002 to ECDCU006 and ECDCL011) which were launched between February and March of this year.

29 The European Commission itself has affirmed that, by 2005, 85% of the existing knowledge and skills of European workers, and this naturally includes the Spanish, will be obsolete, given the rhythm of technological innovation in recent years.

30 There was a very interesting study, in the case of Spain, directed by PULIDO, A, Report on the Evolution of Employment in Spain in the Face of the New Technologies. Madrid: Conference on New Employment and New Technologies, 5 June, 2000, in which the lack of professionals in new technologies was highlighted, along with the necessity to correct this situation.

31 Complementary Documentation can be obtained in Report eWork 2002 Status Report On New to Work. In The Knowlwgde Economy. Luxemburg: Office for Official Publications of the European Communities, 2002.

3.7. E-inclusion

The concept of e-inclusion expresses the desire to construct an egalitarian information society, both ample and just and at the service of all citizens, and with the emphasis on access for the least-favoured sectors of society. To make this desire a reality it is necessary to facilitate affordable generalised **access**, **assistance** for the sectors of society at most risk of exclusion and **strategies of cooperation and development** along these lines.

As has been mentioned, access has not only to do with infrastructure, but also with support, with relational values and with integration of content and services into the users' daily life. The new technologies offer an opportunity to overcome by other means the social gaps, incorporating technological support for actions of social inclusion which are currently under way.

In policies regarding e-inclusion, always underpinned by formation and e-learning, it is necessary not only to tailor the projects for minority groups, but also to integrate approaches of the kind aimed at balancing inequalities which, in greater or lesser degree, are suffered by girls and women in all countries, a group which makes up half of the world's population. Many women nowadays do not have equal access to technology, nor are they being offered the tools nor the skills to use it. Women in developing countries particularly face difficulties in finding work in the ICT sector and lack opportunities to carry out initiatives in this sector. Furthermore, their access to education in these countries is limited, and they normally do not receive technical training, thereby losing representation in labour markets where technology is at a premium. To bridge this digital gap between men and women, thus assuring that women are not left out of the new opportunities which the ICT's offer, it is necessary to combine gender policies and initiatives with awareness programs.

The inclusion of handicapped persons must also be considered in depth. The ICT's are useful instruments for the improvement of conditions and services for these collectives. But they are also tools with a trap for many handicapped persons, as the designs for these tools often do not take into consideration the difficulties which they must overcome. Another important aspect of the ICT's for the disabled is their potential for increasing participation in society, another side of e-inclusion which merits reflection. For example, people with disabilities can collaborate perfectly as online volunteers, and in many cases they demonstrate great satisfaction for doing so, because they feel they are providing valuable help for other people.

Nor can we forget our elders, who in some countries make up an important part of the population. The information society is also for them; they must be kept in mind, incorporating relevant content and services and facilitating their access and use of technological tools.

Challenges and Opportunities in E-inclusion

(Cecilia Castaño, Full Professor of the Universidad Complutense de Madrid)

[…] The promotion of computer and navigation literacy is an important task which remains to us, especially for people with a low level of training and those who may be aware of the existence of Internet but don't consider it necessary either in their profession nor in their private lives.

In the information society social, educational and cultural differences, as well as the risk of social exclusion are the down side of the opportunities which present themselves. Half of the world's population has never made a telephone call, much less accessed Internet. This *Digital Gap* reflects the division among individuals, homes, businesses and geographical areas of different socio-economic levels in relation with the opportunities of Internet access as a function of income, educational level, age, sex, race, type of home and cultural level of citizens. The inequalities are accentuated because education forms a dividing line regarding access and an ever-widening gap is opened between those who have the competence, the qualifications and the resources to benefit from Internet and those who don't. There is an interconnected world elite which travels and communicates via Internet (the university educated, executives, upper middle classes…) Opposite this privileged sector we find great masses of population which remain in poverty and exclusion and who tend towards fundamentalism, reaffirming their religious, cultural, national and local identities.

But the information society is a **dynamic concept**, a **process of change** and social development is an **objective to be achieved** *(Castaño,C. Román, C. et al (2002):Andalusia Faced with the Information Society, Economic and Social Council of Andalusia).* In this process the idea of **effort** predominates in three dimensions: the **infrastructures**, which permit us to access the IS; the creation of the necessary **human capital**, as without knowledge and skills it is impossible to take advantage of the ICT and the IS; and the **social capital**, because a society's mobilisation capability, throughout its institutions and organizations determines in what measure it is able to benefit from the IS. It is in these three aspects that the action of public institutions is essential to avoid exclusion and improve essential aspects of citizens' quality of life through the use of the ICT's.

Education offers us a good example of the challenges and opportunities of e-inclusion. On the one hand, the generalized increase in training requisites implies that education and training are not over when we leave school, nor limited to a given period of our lives, rather learning must go on throughout our lifetimes. On the other hand, the availability of new media (PC's, Internet, CD-Rom, digital video) contributes to changing the model of education from the emphasis on teaching (the teacher is the one who has the knowledge) to the emphasis on learning (the student/user can have a personalized learning plan which permits him or her to adapt the required knowledge and learning to their own rhythms and styles.) Distance is no longer an impediment to learning, consulting books, documents and diverse scientific material, thanks to high-speed communications networks. This is especially important for people with special necessities (the disabled, older people) who can increase their possibilities for an independent lifestyle, since new modes based on the ICT's can increase their autonomy and improve their social integration and interpersonal communication (the blind, the deaf, mutes, the chronically ill...) and the possibilities of informal training for people with learning difficulties. Even so, the costs of the application of the ICT's to education in schools, workplaces and homes are still elevated. Therefore, the number of beneficiaries is still limited.

The promotion of computer and navigation literacy is an important task which remains to us, especially for people with a low level of training and those who may be aware of the existence of Internet but don't consider it necessary either in their working nor private lives.

Public administrations offer an increasing number of formation courses adapted to the different technological cultural levels of the population. Nevertheless, the learning challenge is not overcome with courses alone. It is necessary to integrate these actions with others designed to motivate potential users, such as awareness campaigns which permit people who live at the margin of the IS, such as women with low levels of studies, to receive information regarding the advantages which Internet use can offer them (access to information, cooperation, official paperwork, communication with family and friends.) Campaigns must be mounted which motivate people to take an interest in these tools. There must be promotion of those Internet services (websites and email) which are most immediately useful for women and their families.

The training courses in the use of Internet and office automation technologies should be accompanied by information society access promotion measures directed to the bulk of the population. Many people do not consider ICT use very difficult. In spite of fact that the courses in Internet use for women or people with low educational levels are very short (a week at the most), these people learn to use the Web, as the cases of the town of Jun in Granada and the Cordobesas Enredadas (Networked Women of Cordoba) have demonstrated. But these skills and knowledge are worthless if they are not applied. For this reason it is necessary that students have continued access once the computer and Internet courses are over, either by providing more public access points or through programs of assistance to people who have participated in the courses. Computer purchase could be carried out either through subsidies or special prices or both, with the help of agreements between the administration and manufacturers or wholesalers.

Along this same line, we must design courses keeping in mind the *what for* of each group. In the case of women, university students demand more practical computer courses better related to the demands of the labour market. Older women can have an interest in communicating by email with their children who live far away, and learning to send photographs via Internet. Mothers with young children and women with the responsibility for other family members are interested in the possibilities of resolving official paperwork from home and connecting with nearby services (health, education, care of children or older people…) The experiences of these users will be useful for other women. The construction of positive models in the use of the ICT's will attract many more women.

The previously existing innovation culture is also essential: the R+D efforts, the attitude of public administrations (central regional and local) and of organizations of civil society (businessmen, unions, women's organizations, young people, consumers, citizens in general...) and the habits of access and use of the communications media by the population (frequency and intensity of use of television, computers and Internet.)

The Information Society. Barriers and Opportunities for Women in Andalusia

Project carried out by the Institute of Regional Development (University Foundation) of the University of Seville and financed by the Andalusian Women's Institute.

Directed by Cecilia Castaño Collado, Full Professor of Applied Economics of the Universidad Complutense of Madrid

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Abstract

The relation between women and the IS is different from that of men, insofar as their position in society and in the economy is different. The situation of women has not been a static affair throughout history, rather it has evolved in parallel with social and economic change, especially stimulated by the women's own struggle for freedom and autonomy.

The changes brought on by the IS, the use of its tools (computers, Internet, email) by women is giving rise to changes in the attitudes and the position of women which can help to overcome gender inequalities and promote the full incorporation of women into public life.

Throughout our research we have taken into consideration the contributions of other authors (Castells, 1997 y 2000; Carnoy, 2000; Marcelle, 2000; Castaño et al, 1999) which has suggested that, despite the diffusion of technologies, it has not been neutral as respect to gender. In spite of the fact that its effects have not been homogeneous throughout social classes and races, the ICT's offer women opportunities for the expansion of their economic projects and for positive changes in social, political and cultural terms:

1. Through IS women can increase and improve their economic and social presence, and have massive access to employment, due to both the necessities of the ICT's for feminine labour and the fact that, in a labour market which is segregated by gender, women make up the most flexible segment.

2. The diffusion of the ICT's throughout the economy (flexible automation; increase of indirect tasks; higher qualification requirements; flexible hours, teleworking...) contributes to improve the position of women in terms of horizontal discrimination –presence in all productive branches – while vertical discrimination (men and women still occupy different types of jobs) remains unchanged.

3. The emergence of the networked business opens up possibilities for women. The ICT's and Internet permit the networks traditionally limited to women's circles, to be applied to production, to manage its growing complexity.

4. By the same token, the diffusion of the ICT's, their production and consumption, are accompanied by values which can contribute to change gender

stereotypes and create new identities for women, besides connecting and uniting them. This phenomenon reinforces their own discourse and their own networks, thus contributing to promote self esteem and empowerment.

All these changes in ways of doing business, creating jobs, working and living, mean new challenges and new opportunities for women, since the characters and the differences between men and women have also changed. Before they were differences in rights and training. Today women surpass men in academic titles and their job performance is similar to that of men, if not more efficient and more adaptable to the new requisites of the IS.

In the following remarks we ask ourselves if, consequently, the diffusion of the IS might not contribute to reducing gender discrimination. An important argument in this issue is that economic growth and productivity are no longer sustained by physical force, rather in intellectual and human qualifications. There are also more transparency, access mechanisms and promotion of work for women. Finally, flexibility (both in the positive and negative senses) and telework open tremendous fields of feminine employment and participation.

We have considered the gender indicators of the information society and results are certainly worrying:

➘ *On the one hand, indicators regarding gender differences in the IS are still very scarce.*

➘ *Based on existing indicators we can deduct that there are few women as yet in the IS, those who have access to the potential benefits.*

From the gender perspective, in the European Union the women technology users are 40% of the total, well behind men at 56% (eEspaña 2002). Spain is among the countries with greatest gender inequality (masculine index / feminine index is 1,63). Nevertheless, the situation has improved and the percentage of feminine Spanish internauts has passed from 27,5% of the total in 1997 to 40% in 2002.

This low index of utilization is due to several reasons: women show lower indices of activity and employment than men, their incomes are also lower and this makes more difficult the acquisition of computers and the financing of Internet access. Most women work in less-computerized environments (education, health, social services); they have less free time, due to the double working day; and no doubt they are influenced by the prejudice which they find in technical studies and professions, traditionally masculine environments where women are perceived as less welcome.

According to data from the CIS (Eurobarometro, 2001), Spanish women also use the information and communications technologies in a lesser degree than men. The most significant difference resides in the use of personal computers: 41% of men use PC's as opposed to 27% of women. The differences between sexes are also notable in the number of Internet and email users: 30% of the men consulted said they knew and used Internet, while the percentage dropped to 18% in women, and in the case of email, 28% of men and 16% of women.

With respect to the frequency of use of these technologies, the behaviour of men and women are similar: mobile telephone and computer use are generalized, while the use of Internet and email are less frequent. We must always keep in mind that women still use of all the mentioned technologies less than men.

From the gender indicators we can deduct that the rhythm of integration of women in the information society is slower than that of men. We note significant differences in the availability of basic equipment and usage level, reflection of social and cultural differences which exist in the society.

From our analysis we can extract some interesting conclusions:

➘ *Information society access by Spanish women will be extended to the extent that more women are incorporated into the labour market and use the ICT's as tools for professional use.*

➘ *The profile of the intensive feminine user of the ICT's corresponds to a woman with a high level of studies (frequently university studies) between 25 and 44 years of age. Younger women (18-24) are those who make the most intensive use of the mobile telephone, but are less habitual users of Internet and email, which may be explained, at least partially by their lower level of incorporation into the labour market.*

➘ *The level of formation is decisive for the incorporation of women in the information society. One third of the women with just primary studies who were interviewed affirmed that they were not interested in Internet and a similar percentage considered it "not necessary" for their private lives. One of every four women at this level of education affirmed she did not have time to learn to use the Web or did not know how to use it.*

➘ *The use of ICT and its frequency by Spanish women can be explained largely by the activities which they carry out on the Web. We have observed that the percentage of women who use the Web for information and documentation searches increases in direct relation to the level of studies. Internet and email are tools which are valued especially for women with an elevated level of studies (university level and secondary education) insofar as they offer these women value-added services (electronic banking, income tax declarations, resolution of transactions with the administration via Internet…) less used by women with only elementary studies.*

The results of our research show that the groups of women who use ICT least are those with low levels of studies, those who are 45 or more years old and housewives. It is necessary to take these facts into consideration when developing new projects to attract women to the use of the ICT's.

Formation and learning must be approached from the question of ***who*** *and* ***for what****:*

➘ *Passive students must be offered specific proposals related to their fundamental objective, training for employment. That is to say, the ICT's should be used not only to improve training for the labour market, but also to connect one environment with the other.*

➘ *Businesses should be offered training which permits them to utilize the ICT's to improve their businesses and increase their competitiveness. For that they need specific formation and specialized content (in line with the Telebalance program.)*

➘ *Housewives must be offered training which improves their skills as consumers when purchasing via the Web or simply seeking information on the Web in order to buy better.*

➘ *Small businesses, suppliers, must take into consideration that most women—and most men—don't only need to buy via Internet foreign products and services, but also local ones. For that reason they must consider the necessities of women and the activities which women are responsible for, both the most advanced and the least prepared*

➘ *From the point of view of content and services, the IS must be utilized as a* ***tool for conciliation*** *between domestic and professional life. The organization of information, the content available in Internet, must improve its structure with search engines related with the actual interests of women—****close services with a local dimension*** *– and not so heavily tilted towards such supposed feminine interests as beauty, the kitchen, fashion, and heartthrob magazines. The institutions can play an important role in this sense, as intermediate agents, suppliers of information, multipliers of local services.*

As far as the public administrations are concerned, the current panorama is noteworthy for its isolated experiences regarding women and ICT, but these do not form part of well-structured general policy aimed at achieving equality in professional life, conciliation to their personal and professional lives, formation, participation, and quality of free time. It is necessary that the initiatives which are being carried out for women in relation to the ICT's be continued. If they are not, the pilot experiences will not have served to create valid political strategies.

Public administrations offer the citizen the possibility to contact them via email. Nevertheless, 58% of women do not use this medium. Probably the fact that there are increasingly more websites dedicated to women and women's equality issues, will foment greater electronic correspondence with the administrations. There are still, however, barriers which make this communication difficult for many women.

The availability of information on Internet through Andalusia's Diputaciones Provinciales, with spaces dedicated to women and equality of opportunities between men and women would benefit both collectives. But the frequent lack of operativeness of email in the administrations greatly degrades the possibilities of this communication. It would be highly desirable for this communication service to be fully operative.

As a consequence, it is necessary :

➘ *That public institutions with responsibilities in questions of gender systematize and coordinate their activities related to ICT so as to carry out action policies based on pilot experiences. Currently the efforts of the public administrations are somewhat disperse and still do not constitute an integral policy in matters of gender and ICT.*

➘ *To update frequently the women's information in the websites of the public administrations.*

➘ *That the personnel of the public administrations responsible for taking decisions regarding programs related to women and the IS possess the necessary ICT knowledge and skills, so as to be able to apply standardized criteria.*

- *To coordinate with private entities access to ICT in rural zones.*

- *To create groups of experts on the IS and gender which can advise the institutions on projects, strategies and measures to apply.*

- *The creation of a permanent observation – action space updated with studies and reports on questions of gender and the ICT's.*

New Technologies and Disability

(Antonio Jimenez Lara, Director of Disc@pnet[32])

[…] If the technology is not adapted to the necessities and capacities of individuals or is not normalized according to the access necessities of disabled persons and other consumers, if the principal information of the future is processed in such a way that some groups of disabled persons are excluded, the information society will become a threat for disabled persons the world over.
[…] If we want the information society to be a society for social cohesion and not a new vehicle for the exclusion and dualization of the citizenry, it is essential to achieve the commitment of the public powers, of the economic and social agents and the entire society, to develop legislative measures and technical, business and social projects which assure that the world of the disabled benefits from technology.

The new technologies of information and communication are formidable tools in the advancement of social integration, in which so many hopes have been deposited, but they can also become a new and insuperable barrier for many disabled people. The information society opens many expectations for the disabled in questions of formation and employment, and access to goods and services. But they can only become realities if the information society is built with the collaboration of all citizens, men and women, where it is participation and the sum of the capacities and potentialities of all members of the community which generate authentic value. Based on these premises we can hope to advance towards a more efficient, fairer society, capable of managing and sharing the most diverse knowledge in benefit of all.

The development of the information society is having, and will continue to do so in coming years, an enormous impact in all aspects of people's lives. Not only is the form of working and doing business changing radically, but also ways of studying, accessing skills and knowledge, interacting with other people, having fun and pursuing ones hobbies. It would be an error, therefore, to think that, in the case of disabled people, the information society is limited only to problems of health and mobility, forgetting all the other aspects of their life in society.

For people with disabilities, as for the rest of the citizens, the development of the information society is not something that only affects every aspect of their lives, but it is also something which is full of possibilities and dangers. The information society is therefore a challenge which brings with it risks and opportunities.

The development of the information society could present a serious threat to the equality of the rights of persons with disabilities if its challenges are not met in a way which protects these fundamental rights. Information has become a social necessity and a fundamental aspect of human rights, and we cannot permit that any group be excluded from it. Those who are unable to access information in equal conditions run the risk of losing some of their most basic rights. If the technology doesn't adapt to the access necessities of individuals or is not normalized according to the access necessities of disabled persons and other consumers, if the principal information of the future is processed in such a way that some groups of disabled persons are excluded, the information society will become a threat for disabled persons the world over.

[32] Discapnet of the ONCE Foundation and the European Fund for Regional Development was created to foment the presence of Internet in the disabled sector.

People with disabilities confront the real danger of being excluded from these advances. As the European Disability Forum pointed out in its Manifest on the Information Society and Disability,[33] currently people with disabilities have no guarantee that the information society will keep its promise of becoming a society totally open to all.

Expectations in the Fields of Formation and Employment

One of the aspirations of disabled people is that the promotion of information technologies might facilitate their incorporation into the workplace. Currently these people do not enjoy equal employment opportunities. Many of them need only an adaptation to the tools and the work environment to be able to do the same work as people without disabilities.

A great deal of hope has been deposited in the role that information technology can play as a tool for improving training levels and promoting the employment of ample groups of disabled people who are not yet incorporated into the productive process. This is a question of fundamental importance, as the number of inactive or unemployed disabled people is disproportionately high. Information technology can change this situation, providing jobs at home to disabled people with serious mobility restrictions, or adapting conventional workplaces to permit access to disabled workers.

The information society brings an infinity of opportunities which can contribute to an increase in employment indices for disabled people. On the one hand, the new technological tools can make it possible for many traditional tasks to be carried out in a simpler way by the disabled, opening up access to existing jobs. On the other, the information society is giving rise to new forms of economic activity, and with them, new forms of employment.

The growth of employment in the service sector presents another great opportunity for the disabled. Not only is an increasing number of persons employed in the service sector, as opposed to industry and agriculture, but more and more people are occupied in tasks related to the production, handling and transmission of information. The growing necessity for better qualifications, more intellectual than physical, can mean more interesting employment opportunities for people with physical and sensorial disabilities. Currently, many industrial processes are guided and controlled by computers, a fact which permits disabled people to aspire to employment in this field, as well.

For people with disabilities who do not have very high levels of education or specialization, technological change can have a negative effect on their employment opportunities. For this reason it is important to invest in training disabled people, using all the means available to promote lifelong formation, specifically through programs of "technological literacy training;" so as to give them the possibility to acquire the hardware necessary for easy access (such as, for example, creating networks of telecentres) and guaranteeing an adequate telecommunications infrastructure.

Access to Goods and Services

People with disabilities potentially constitute a very broad group of consumers. It is, furthermore, a group with a high level of organization which can therefore exert considerable pressure in the market with its preferences. Therefore, there are many implicit possibilities of commercial exploitation of the information technologies which might be developed with disabled people in mind. This argument will take on more weight as more disabled people use these technologies.

[33] EUROPEAN DISABILITY FORUM: *Maniiest on the Information Society and the Disabled*, Brussels: European Disability Forum, 1999.

Nevertheless, the lack of participation of disabled users in the research and development of new technologies or the lack of adaptation of these technologies to the individual necessities of people with disabilities can exclude many potential consumers from their use, unless expensive adaptation measures are not taken in the finished products. Besides the loss of competitiveness which this implies for the economic system, the most negative aspect is that, if the necessities of the disabled are not taken into consideration, a large sector of citizens would be excluded from information access, products and services which are important for their lives and personal interests, which would increase their social isolation and would threaten their fundamental human rights.

Domotics and Disability: New Frontiers for an Independent Life

One of the fields in which the application of the new information and communications technologies is generating promising innovations for the disabled is that of domotics, the name we give to a set of systems which automate the different installations of a home. Domotics imply the application of diverse technologies: electricity, electronics, computer science, robotics and telecommunications, all of which converge and are integrated into a system for providing applications and services to the inhabitants of a home.

For the disabled, the development of domotics, their adequate integration into architectural design and the proper equipment in a home, permits an extraordinary enlargement of their level of personal autonomy and their possibilities to live independently. What for most people is a simple improvement in personal comfort or security, for a disabled person can make the difference between being able or not to manage without assistance a series of domestic tasks which are essential to daily life. For this reason, the incorporation of ergonomic designs and technological innovations in the homes of disabled persons is increasingly common.

The two basic criteria which should be considered when configuring a home for the disabled are accessibility (making possible free movement, the utilization of all spaces and the handling of all the necessary equipment by any person, regardless of disability), and autonomy (designing with the idea of giving a disabled person maximum independence in his or her home.)

This is why it is so important to guarantee the input of disabled users in the research and development of products and technological applications, incorporating people with disability in the process of development of new products and the adaptation of existing ones.

Towards the Knowledge Society and Collective Intelligence

The information society refers to relations among persons. We must not forget this fact, nor the fact that technology should never substitute personal contact. The use of information and communications technologies is and will be of vital importance for people with disabilities if it is applied to the creation of networks and communication, to the exchange of relevant experiences and information and to create meeting places for disabled people who live similar situations.

For this reason, the information society brings with it another forceful idea, the knowledge society and its manifestation through knowledge communities and collective intelligence, where it is the participation and the sum of capacities and potentialities of its elements which generate authentic value. From these premises we can hope to advance towards a more efficient and more just society, which knows how to manage and share such diverse and complex knowledge as that which is necessary today to understand the profoundly different realities experienced by social minorities. At the same time we can hope to generate the knowledge and actions necessary to meet these new challenges.

If we want the information society to be a society for social cohesion and not a new vehicle for the exclusion and dualization of the citizenry, it is essential to achieve the commitment of the public powers, of the economic and social agents and the entire society, to develop legislative measures and technical, business and social projects which assure that the world of the disabled benefits from technology. Technological advances and new applications and services made possible by information and communications technologies must be a source of opportunities for integration, learning and employment, and not a set of new barriers which augment exclusion and discrimination.

New Technologies and Labour Relations

(Jose María Fernández de Villalta, President of AUPACE, Association of Adult Persons with Cerebral Paralysis or Other Similar Disabilities)

[…] We must urge the public powers to establish as a principal variable of vulnerability "the situation of risk or exclusion which the subject suffers" in a given moment, and not his or her belonging to a certain group, since what determines a person's status as a youth, older person, woman or immigrant are de facto variables, or of origin, which need not indicate exclusion.

The policies of e-inclusion, in the world of new technologies and labour relations, should have as their main objective the promotion of participation in employment and access to resources, rights, goods and services by everyone. In these areas some things are being done, but it seems necessary to have a second look at them in the new context in which we find ourselves.

Promoting Participation in Employment

Generally, inclusion policies gather together diffuse concepts such as "social employment" which do not make clear whether they refer to social economy, to certain support and promotion activities aimed at ordinary businesses or to existing modes of access to protected employment, to supported employment, insertion businesses, etc. It is a know fact, for example, that there are no measures in the pipeline to promote the changeover between sectors or the improvement or promotion of employment in equal-opportunity conditions.

As regards cooperative and social employment, local initiatives must be more carefully articulated and must develop concrete and innovative initiatives which create new formulas for access to employment.

Fomenting Access to All Resources, Rights, Goods and Services

Normally, inclusion policies exclude sectors which are forgotten because they don't apply for specific subsidies and other groups which require assistance "in kind:" reduction of the cost of products, subsidies for non-health services which facilitate access to goods: housing, transport, medicines, etc. *We need a definition of crisis situations and levels of action, since, in comparison with the rest of the population, these groups find themselves in a situation of "permanent crisis," insofar as they start from clearly unfavourable conditions.*

In the case of the new technologies, training in the information and communications technologies should go beyond what has been done until now if we want excluded groups to be competitive in this field.

Reducing Vulnerability, Specific Collectives

Besides the objectives mentioned previously any inclusion policy should offer *support for specific collectives*. We could comment this subject extensively, enumerating concrete strategies and activities for each one of these groups, but we will limit ourselves to general remarks:

We might be tempted to think that all women, immigrants or disabled people are in vulnerable situations. Nevertheless, there is a great variety of situations and differences between the men and women who belong to these classifications. As a consequence, people can be left out of inclusion measures simply because they do not belong to any of the risk groups. Among them are groups like:

- Young people in general
- Unemployed, precariously employed or discontinuously employed adults with housing or training needs in new employment possibilities
- People over the age of 45 without employment possibilities
- Workers, both men and women, in rural or fishing sectors at risk of employment exclusion or banishment
- Emigrants and/or returnees

We must urge the public powers to establish as a principal variable of vulnerability "the situation of risk or exclusion which the subject suffers" in a given moment, and not his or her belonging to a certain group, since what determines a person's status as a youth, older person, woman or immigrant are de facto variables, or of origin, which need not indicate exclusion.

Global measures are necessary to attend all aspects of the person and his or her circumstances so as to avoid exclusion. Among other necessary measures is the providing of basic training in ICT and the guarantee that real and affordable access obviate the risk of exclusion and the broadening of the digital gap. The ICT's can also be a valuable instrument for putting into practice other measures of social inclusion. *Prevention would be more effective if measures such as longitudinal studies were carried out, with quantitative and qualitative methodologies which permitted us to acquaint ourselves with the reality and evaluate the progress and efficiency of pro-ICT measures.*

We could also mention in this connection the mechanisms of provision and increment of funds, as well as possible activities which permit the compensation or adoption of urgent measures for the prevention of exclusion.

In relation with the *Access to the New Technologies* the distorted impression might exist regarding the incidence that the ICT's might have both in the prevention and the production of exclusion. Certainly nowadays they are not the principal factor in exclusion. *The welfare society or the capacity of a country to incorporate their excluded collectives must establish in its scale of values such as interculturality or the difference and the gaining of the most basic rights such as culture or health or the right to civic participation.*

We would like to emphasize once more that the exclusion produced by the lack of access to the ICT's should not be overestimated, since it is only one more of many indicators in a new exclusion situation with its origins in technology or due to the lack of adoption of the necessary training to opt for employment or education. We must not be deceived by the false mirage of considering that access to ICT is an indicator of social wellbeing, of social incorporation or equality of opportunities.

A massive "technological dependency" can actually increase the number of excluded people, as well as masking basic social realities and necessities which still do not enjoy appropriate coverage. For example, at the same time as courses for advanced programming are being

promoted, other professions, equally associated with ICT, such as the creation and updating of content, which require the formation of documentalists, graphic designers, proof readers, etc.

In conclusion, we need a qualitative leap. Until now training in ICT has always been directed to impart basic Internet skills, text processing and spreadsheet knowledge, converting these groups in "advanced users," but not in ICT professionals. This would require learning a much wider and deeper set of abilities than just ICT training.

INFOREDAR[34]

An Experience in Telework and Social Exclusion

Javier Acon (Inforedar Worker)
Elena De Los Santos (Aupace)
Jose María Fernández de Villalta (Aupace)
Nacho Laseca (Promotor Inforedar)
Javier Rubio (Aupace)

ANTECEDENTS

INFOREDAR and REDAR form part of a project to create a network (REDAR is the acronym for Employment Network for Disabled Persons in Rururban Areas (Red de Empleo para Personas con Discapacidad en Áreas Rururbanas), in rural and urban or urban and hyperurban areas. This was the initial idea because we conceived two interpretations of REDAR (from the Spanish, "red," "net" or "network"): one was to CREATE A NETWORK, as our project consisted in weaving a web; and also "RE" and "DAR," (from the Spanish "dar," "give") to give another opportunity, give an option to people who, initially, in their professional careers, for the difficulties they faced, had remained excluded. It was a matter of discovering if telework really is a tool which favours disabled people.

In parallel with the creation of this network, there was a lot of other research taking place on the subject of teleworking. There was research into the learning processes of persons, based on different technological platforms, as well as in issues of accessibility and help systems for working with new technologies, etc.

From the personal point of view, the guidelines for choosing a telework option were profitability, comfort and flexibility. Actually the motives which impel most disabled people to decide to work online usually have to do with their capability to work and their necessity to feel useful and socially esteemed. Many integration experiences in employment integration are centred exclusively on training and knowledge of the relevant tools, as if the rest were to follow automatically.

[34] Inforedar services is a center for special employment for the disabled created by AMIRA SISTEMAS, AFAPIS y AUPACE. Inforedar is dedicated to the management of information on Internet and oriented towards the social application of new technologies.

INFOREDAR has gone a step farther, analysing the way people work in a virtual network, and teaching the students the value of TEAMWORK applied to new technologies. They have acquired personal and social skills which their environment, usually limited to an overprotective family, would never have taught them.

The Present Time

We are certain that there are specialized employment centres which have no difficulties and function like any other employment agency. We have always understood INFOREDAR as a normal business, both in productivity and in the working conditions of the employees. The principal advantage of a centre of this type is that it permits a person to work and socialize in contact with other companions, and it enables him or her to decide whether they prefer working at the office, from home, or a mixture of both.

From the organizational point of view, neither are we all alike nor do we all have the same available workspace. At home each one of us has his or her own profile, physical, family related, environmental, depending upon the activity which exists in the home, etc. These are all issues which a thoughtful telework program must take into consideration. Collaborative teleworking is taking a combination of the capacities and responsibilities of each one and mixing them to attain an optimum result in terms of online work. The individual contributions to a given task are not valued so much, rather the fact that all workers together take responsibility for the final result. This philosophy permitted us to create a workplace where people actually teleworked. We considered creating a "special employment centre" for the subsidies available for disabled people, but this very legal classification as "special" complicates our commercial task when it comes to selling our products or services because people think that "special" means uncompetitive or low quality.

We currently work with nine people, though our technological and organizational infrastructure would admit up to 100. The problem is that there must be sufficient business in the information, data and knowledge management sector, on electronic media, which is the principal activity of INFOREDAR.

What differentiates INFOREDAR from other SPECIAL EMPLOYMENT CENTERS or companies who employ disabled people is:

➔ *The severe disability of the workers which normally relegates them to manipulative tasks*

➔ *The sector which the company works in: the management of content and ICT*

➔ *The "normal" character of the conditions of the workers, and their participation in the management, control and participation in the company. This organizational model is common in cooperatives but less frequent in Special Employment Centres for disabled people.*

In parallel with the above process, our start-up also coincided, in the year 2000, with the deflation of the famous "Internet bubble" and all companies began to cut back spending on Internet projects, our basic activity. Nonetheless, we are trying to consolidate these nine persons, consolidate the company, the special

employment centre and for now we are still here, and we will soon celebrate our third year in the business.

Initially, from the institutional point of view, the support of the Zaragoza city hall has been very important and remains so, not only in terms of subsidies, but also as an important client. We have also had help from the Aragonese regional government, with subsidies. Then there have been a series of companies which have backed us from the beginning, technology companies which have supported us, above all, granting us special treatment, not only in economic terms, but offering technical support. We have also had the support of associations like AUPACE, which has been one of the partners of the special employment centre from the outset. Their knowledge of the problems of disabled people and of teleworking as well has been invaluable. That is to say, we have received support from many sides, the majority of them anonymous altruists.

We have been at the point of failure due to adverse economic and financial conditions, which can distract you from your business objectives. We consider our special employment centre to be the best of all; now it is just a question of conquering the free market.

CONCLUSION

We consider INFOREDAR not as an ordinary company, rather an extraordinary one. We have noticed, for example, that "losing your best workers" to another company is not necessarily a negative experience.

The economic problems we have faced have not been due to lack of quality. The work done in INFOREDAR is quality work, the equivalent of that done in the most professional companies of the sector.

In fact, our commercial orientation comes from the HORIZON[35] project, where one of the activities was focused on the sale of products. So, when we initiated our business adventure we realized that it had to be profitable. The only thing we have changed has been our commercial strategy, fundamentally due to the evolution of the technology market and because we have progressively discovered what we do best and the products in which we can be most competitive.

In INFOREDAR we harbour no paternalism towards the people who work there. We have not created a company so that INFOREDAR SERVICIOS might become very important, rather so that the people who make up INFOREDAR SERVICIOS might be satisfied with what they do. Within the parameters of our original business plan INFOREDAR SERVICIOS undertakes to give their clients value for money and to solve the problems which arise day by day.

[35] Like all of the HORIZON projects, its objective was to train and insert disabled workers into the labor market.

The Knowledge Society with Woman's Knowledge

(by Mª Ángeles Salle, President of the Board of Trustees of the "Fundacion Directa"[36])

> […] In these new scenarios it is clear that we women must participate very actively, a participation aimed at achieving two great objectives: that of substantially improving our integration in employment and in decision-making positions.
> […] we are talking about a society still under construction and we can and must "colonize" it so as to redirect it towards an inclusive feminine paradigm. In fact, this is what many people and organizations—from different standpoints—are trying to achieve, by joining forces in this decisive moment.
> […] to change the reigning models of professional success (transformation strategy) which are leaving us at the margins of the elaboration of the rules of the game.

There's a lot of talk about the knowledge society, as a new system in which the fundamental productive factor moves from the earth and capital towards intangible elements contributed by human creativity. The technological revolution has created a potent scenario for this transformation, to the extent that information has become both the support and the product, circulating around the globe, furthermore, at dizzying speed.

This revolution is revolutionizing all our known parameters of space and time in which we had placed our activity until now: work, consumption, learning, free time, daily life, human relations... Still today, it is fair to say that we do not yet realize the full extent and impact of the phenomenon.

From the point of view of women the new society offers us important potential advantages in better positioning our personal and professional roles and interests, because:

- *The **value added** is not longer contributed by brute force,* which always left us at a disadvantage with men, rather with knowledge and skills, where women, in principle, are not subject to limitations,
- The possibility to ***de-localize work*** introduces flexibility into our management of space and time,
- The new society requires ***many competencies*** (integration, teamwork, motivation, discipline …) ***which women have been putting into play*** for a long time, and this is an excellent point of departure for our professional launch,
- The value of these competencies in today's professional context is more objective, more measurable, and for this reason it is reasonable to expect that ***discrimination based on stereotypes will tend to diminish*****,**
- Faced with a reality which is totally new for everybody, we women find ourselves with a ***unique opportunity to extend the limits***.

At the same time, we are faced with undeniable inconveniences:

- Women are more affected by technological barriers,
- We women entered in this world as users of models designed and produced "in masculine." What are the criteria for deciding the telematic applications, the R+D programs? What priorities and guidelines do they apply? They seem not to be feminine criteria, insofar as we are practically absent in the construction of the system,

[36] The Fundacion Directa is an entity of social character and of public interest, promoted by professional women and managers who form an innovative and plural platform, aimed at promoting equality of opportunities between men and women in cultural, professional and family environments.

- ➔ The flexibility introduced by technological tools can consolidate our domestic/family role, in detriment to a more balanced conciliation of these responsibilities between men and women,
- ➔ In the new society risk is valued over security, and we women have still not learned to deal naturally with turbulent environments; we still show notable insecurity and difficulties in the exercise of power.

In these new scenarios it is clear that we women must participate very actively, a participation aimed at achieving two great objectives: that of substantially improving our integration in employment and in decision-making positions (positioning strategy), situating ourselves with self assurance in new jobs, in the competitive small business, in the scientific community, in politics, on the leading edge of technology, in networks; learning what we don't yet know, assuming and exercising that which we do know… We must also change the reigning models of professional success (transformation strategy) which are leaving us at the margins of the elaboration of the rules of the game, as well as insisting that careers are increasingly incompatible with reasonable human life. A growing number of women has begun to reject paying this elevated price which, among other consequences, is contributing to the plummeting of the birth rate and an increase in family conflict. The easy solution seems to be to retire from the circles of power where these realities can be changed, with which we generate a vicious circle of voluntary exclusion from the decision making process.

The information society, since it is a new social model, is still being defined. We are in a moment in which many aspects of this new society are being forged, so we're not looking at a closed process. Thus far, I believe that the first steps taken have not reflected sufficiently the concrete necessities and interests of "women," in plural (not "womanhood," treated as a homogeneous collective.) This is so because our presence in decision-making circles, which are those where the strategies for economic and social development are designed, is very reduced, and because the society is still guided by masculine canons. Examples of this phenomenon are the little attention paid in Internet to quality-of-life issues, or the astonishing way in which the feminine offer in Internet resembles the heartthrob press. The very image of the "navigator" is someone able to travel ceaselessly around the Web (Where do they find the time?) In parallel with these aspects, we must recognize that women's use of Internet (which in Spain is now over 40%), the feminine presence in management positions in the ICT's (superior to that in other sectors) and the opportunities which the digital environment offers in terms of flexibility and the objective recognition of the value contributed by women, are all factors which undoubtedly benefit us. For this reason, we are talking about a society still under construction and we can and must "colonize" it so as to redirect it towards an inclusive feminine paradigm. In fact, this is what many people and organizations—from different standpoints—are trying to achieve, by joining forces in this decisive moment.

Andalusia in E-equality. Fundación Directa.

"Andalusia en E-equality ("e-igualdad") is a project set in the framework of the European Union's EQUAL initiative, the object of which is to contribute to the process of change through four development initiatives: Observatory of women's social and labour realities, Teleservices Portal e-quality, Strengthening and succession of the small family business and Communication for Change.) These initiatives aim to act synergically in:

- *Raising the visibility of the role and demands of women in the knowledge society, making possible the construction of new models for professional success*
- *The development of new personal strategies and skills on the part of leading women, preprofessionals, professionals, entrepreneurs and business women, capable of catalysing transformations favouring women, in accordance with new values and attitudes which will permit them to surpass the "crystal ceiling"*
- *The creation of public opinion which values the contributions of women to the economy and employment, creating a favourable atmosphere for their integration in the most dynamic productive sectors and short circuiting the current system of division of work*
- *And the constitution of networks and meeting places to achieve the critical mass of women and men in key positions, in favour of changing the feminine paradigm*

www.e-igualdad.org

Among the principal novelties, some stand out: Andalusia's ***first great Internet gender portal;*** *the development of new methodologies and experiences in important aspects like the strengthening of the presence of women in Internet enterprises or in the critical processes of succession in small family businesses; the constitution of a new knowledge base of what are the vital and professional strategies of Andalusian women who are breaking new ground; the commitment to communicate and systematically publicize the role and achievements of women in our society. Another of the important features of the project is the promise for the future represented by different organizations of the region (Junta de Andalucía, the Provincial Diputations of Seville and Cordoba, the University of Seville, Business*

Associations of Seville and Cadiz, the Eastern Andalusian College Psychologists, Cibersur magazine…) which have joined forces to work on a project in which they firmly believe and in which all partners are contributing their best efforts in advancing Andalusia towards full e-quality.

3.8. Transformation of processes

The transformation of processes implicit in the incorporation of IS services to an organization, community or project is not just a question of technology, rather it demands coordination at all levels, both technical and in terms of competencies, in order to guarantee the viability, and efficiency of the undertaking.

Experience shows that when technology is introduced into an organization of any type (public administration, business, NGO...) without modifying the processes for doing things, the benefits diminish. The challenge resides identifying clearly the jumping off point in the modification of processes. This, many times, is found in an informal "know-how" than in clear and recognizable documents. For example, for a business person to take advantage of ICT it is not enough to substitute the typewriter for a PC, nor the calculator for accounting software; you have to re-evaluate the heart of the business and modify the areas (commercial channels, relations with suppliers, production processes…) which are susceptible of being enhanced by ICT. The necessary leadership, training of teams and management skills are bottlenecks which impede the proper transformation of processes.

By the same token, relations between organizations are powerfully enhanced by ICT. The revision of traditional processes of relations must orient them towards the networked society, which changes many of the underpinnings of traditional schemes of organization, communication, cooperation, power, confidence…. Only the passage of time and the teachings of best practices will permit us to take advantage of these opportunities for development cooperation in general as well as individual projects to multiply their effectiveness. The greatest challenge is not that of adapting current process to ICT, but reinventing them.

When the entrance of the information society into a community comes about through external forces, through some type of cooperation, it is important to keep in mind that the transformation of processes can only be carried out from a local point of view capable of adapting solutions to particular circumstances. We must keep in mind that processes used in developed countries frequently are not transferable to analogous conditions in developing countries or, speaking on the internal level, when dealing with certain social groups the change they undergo in their processes must be handled differently from the normal procedure.

In any case, to speak of transformation of processes, means talking about the persons who do a job and the way they relate to others. The transformation of processes always needs the commitment of local people capable of guaranteeing the functioning and sustainability of the innovation introduced, in this case, the incorporation of the information society at the service of development.

In development-cooperation initiatives and volunteer programs there is a wide and active field open for innovation and the reinvention of processes. Online volunteers constitute a new form of contributing human resources to cooperation projects. There are two sectors in society which can lend inestimable support as volunteers: university students and disabled people. Students, who find themselves in a stage in their lives when they are largely free of job obligations, can employ part of their free time to share their knowledge. Furthermore, the participation in an ICT or online volunteer program can offer them valuable experience for their future working life. In the case of developing countries, the university, as a place which gathers together the young people of the country in a learning process, is the ideal place to create sensitivity in future political leaders.

On the other hand, the disabled are not only the object of inclusion measures, but can also participate actively, through cyber-volunteer work, in helping other people who deserve support. This also contributes to the disabled feeling useful and integrated into society, seeing how they too are capable of helping others, without physical impediments and in total liberty.

Programs of online volunteer work can also involve other collectives, such as the corporate sector (large companies which can encourage their employees to participate in volunteer programs) and emigrants (people who have emigrated but want to remain involved in the development processes in their own countries.)

"Netting" the Global Citizen into Development Cooperation

(Manuel Acevedo, United Nations Volunteers[37])

[…] Internet and other ICT's permit all of us to be "actors" in development projects, easily and flexibly, without even leaving home. The new technologies contribute to "dis-intermediate" cooperation, thus forging direct relations among the different actors, creating an environment in which everyone learns and everyone benefits. All of this makes it possible for many different people to get involved, a key factor which will determine whether or not this century will be the century of human development.

With a little luck this newborn century could be the century of human development. How fortunate will those people be who get to New Year's Eve of the year 2099 knowing that extreme poverty is so far in the past that it will seem to the what slavery seems to us today.

But we must make our luck, or at least be prepared to take advantage of it when it presents itself. In relation with poverty, that luck will depend a great deal upon citizens, both men and women, of the entire world get actively involved in its eradication, and at the same time, press their governments for strategies of power and development centred on human beings.

The information and communications technologies (ICT's to their friends) should play a fundamental role to assure significant global advances in human development. These technologies permit that people, both in rich countries (your neighbour from apartment 3B, you, your niece, my colleague from the office and me, myself) and in developing countries (a peasant, his daughter, a village woman and a teacher), get involved in reducing poverty and improving the quality of life, each one in his or her own way. The ICT's include computers, Internet and mobile telephones, but also more traditional technologies like the radio. Later we'll see ways in which these technologies can be useful in converting normal people into active agents for development. But what are we referring to when we talk about "development," and specifically "human" development?

The concept of human development arises in the 1980's and basically describes the processes which permit people to have more options in their lives. It's that simple. And that powerful. It implies that human development is centred in opening up (all) human liberties, because without them options are worthless.

In order to extend "real" freedoms, for example the freedom of choosing a job, it is first necessary to acquire a series of skills or abilities, so there must be opportunities to learn these skills. Access to information and knowledge is important in order to opt for these opportunities, even to be able to contribute to their creation. The ICT's are effective tools for making possible access to information, and even better for sharing it. For this reason, nowadays they are considered valuable tools for development. Let's see how our protagonists take advantage of these tools in diverse ways.

[37] The United Nations Volunteers Program (UNV) was created by the United Nations General Assembly in 1970 at the behest of the United Nations Member States to serve as an operational program in development cooperation. It is unique within the family of the United Nations and also as an international voluntary organism. The VNU Program is administered by the United Nations Development Program (PNUD) and works through local offices of the PNUD which are located throughout the world.

@Ecuador

Our peasant friend (let's say in Ecuador) works hard to achieve good harvests and to be able to get his products to market in good conditions, selling them at the best possible price. A woman who lives in his village got a small loan to mount a small business. After buying a mobile telephone, she plays the role of a mobile telephone booth. The peasant farmer locates the woman to make a couple of telephone calls in order to find out where he can get the best prices for his produce. Before he had to trust an intermediary who fixed the prices.

The peasant's daughter has begun to visit the village's telecenter. This centre is something very new which has the village young people excited, and it's beginning to awaken the interest of some older people, as well, people like teachers, health workers, civil servants, even a few housewives. Functioning for little more than a year, this telecenter has a phone booth and four computers connected to Internet. You can also send faxes, make photocopies and scan documents there. The telecenter is managed by a consortium formed by representatives of local government, the principal agricultural cooperative, the parent/teachers association, an rural development NGO working in the province and the Spanish Agency of International Cooperation (AECI).

In the telecenter the girl searches for information for her father regarding cultivation techniques (for example, organic fertilizers and pesticides which do not damage the soil), and also information on prices for her father's crops in different markets around the country. She learned last week that there are different groups of farmers and agricultural extension technicians who communicate via Internet, not only within the country but also with other Latin American countries and also the United States and Spain. She has gone over the messages exchanged over the past week in one of these virtual communities and has discovered information which she thinks will be beneficial for her father (for example, about a new law which facilitates low interest loans for small farmers).

The teacher of the only school in the village has also begun to frequent the telecenter. He's looking for didactic information which will permit him to be a better teacher and also to communicate with other teachers in Ecuador and interchange experiences. He has also noticed that he can establish contact with people and organizations in the exterior which show interest in collaborating on educational subjects. Some months ago one of the monitors of the center showed him how to open an email account and how to use it. He now uses the computers at least three or four hours a week.

@España

Meanwhile, here in Spain we see how a group of people contribute their grain of sand towards broadening the opportunities of people such as those we have described in the example of Ecuador, thanks to ICT.

The neighbour from Apartment 3B is married to an Ecuadorian woman and for some time now he has been collaborating with a Spanish NGO on projects in Latin America. He prefers to donate time and knowledge instead of money, and his wife is from the village in Ecuador which we referred to earlier. He came into contact with a teacher from the village and has been locating and sending him educational computer programs and teaching material via the telecenter. There the teacher prepares the material, adapting it to local conditions (and translating it into the Quechua language) to use it later with his students.

You are a friend of Mr. 3B and you have a computer connected to Internet. One afternoon he stops by your house to show you the website of an online volunteer group which offers

opportunities to collaborate via Internet with development projects all over the world. You found it interesting to be able to dedicate two or three hours a week and you discovered on that website that the consortium which runs the telecenter is seeking ways to receive recycled computers in order to enlarge their installations. They also want to try to open a small computer laboratory in the village school. You are pleased because last week you found out about a business recycling program sponsored by your regional government which recycles computers. They have told you they may be able to allocate you six or eight machines in perfect condition, as next month they are sending a container load of 200 computers to Ecuador.

Your niece, who is 11 years old, communicates via Internet with other boys and girls (like all kids her age!) and sometimes with schools in other cities. After you mention this village in Ecuador, she looks up the Internet address of the telecenter and begins to correspond with the daughter of the peasant farmer. She has fun learning about the gastronomy and customs of that region, and has convinced her teacher that their sixth-grade class should do a cultural project with the village school in Ecuador (she has already introduced her teacher to the Ecuadorian teacher "electronically.")

My colleague at the office, who is unmarried and travels to Latin America a lot, is interested in environmental issues and ecological crops. He is well acquainted with the "Fair Commerce" associations in Spain and is subscribed to an email list where various Latin American agricultural cooperatives also participate. Using email he sends information to the cooperative our Ecuadorian farmer friend belongs to regarding the possibility of distributing organic products in Spain with the Fair Commerce label. The cooperative receives the information through the telecenter, and some weekends they share a chat session with my colleague to clear up doubtful areas, without having to spend money on a long-distance telephone call.

And me... I've contacted friends at a university in Andalusia who work in the agricultural faculty. They are now working with the cooperative in that Ecuadorian village, helping them with information on farming and animal husbandry. These friends from the university receive and answer questions of all sorts from Ecuador (about types of seeds, quantities of water, pesticide necessities, fertilization systems, conservation of crops, animal alimentation with crop residues, etc.) Almost all of their communication is via Internet but at times they have sent packages with books, seeds, video tapes, etc. The curious thing is that the Spanish experts are very impressed by the things they are learning from the interchange with those Ecuadorian peasants.

In Conclusion

In this brief summary we have tried to provide a sketch of how the new environment of the information society (or Web Society, according to the Spanish sociologist, Manuel Castells) modifies certain foundations on which international development cooperation has traditionally rested. Information and knowledge take on greater value for individual and collective development. Processes of individual and collective participation are transformed, at the same time as new mechanisms of creation and use of opportunities are generated.

The examples in the text are not hypothetical, they take place every day. And the good news is that any one of us can do similar things.

Ever more people have access to information they need to improve their conditions of life and their options. There is a new planetary electronic nervous system made up of electronic equipment and networks. Even considering existing limitations (naturally the connection possibilities in a village in Mozambique are not at the same level as those in Tokyo, or perhaps

they simply don't exist...), this system offers the present possibility and future hope of universal access to information.

Furthermore, by facilitating communication, the system enriches the possibilities of collaboration among people and organizations the world over. Internet and other ICT's permit all of us to be "actors" in development projects, easily and flexibly, without even leaving home. The new technologies contribute to "dis-intermediate" cooperation, thus forging direct relations among the different actors, creating an environment in which everyone learns and everyone benefits. All of this makes it possible for many different people to get involved, a key factor which will determine whether or not this century will be the century of human development.

We find ourselves at the dawn of "net cooperation" in the Net Society, where the global citizen is integrated more than ever in development cooperation with his or her planetary neighbours. That is, at least, our hope.

The EMA RTV[38] Project, a Challenge for the Information and Knowledge Society[39]

(Manuel Chaparro Escudero, Professor, Universidad de Málaga)

[…] A fundamental objective of EMA-RTV is ongoing training: training courses in radio and television oriented to satisfy the demand of the market and to update the knowledge of professionals working in local media, so as to encourage the use of new technologies. In the past three years EMA-RTV has imparted some 20,000 hours of training for the professionals of their associated television stations, students and the unemployed, using European funds in collaboration with the Junta de Andalucía and the Andalusian Federation of Municipalities and Provinces (FAMP). The activity is carried out in all of Andalusia's eight provinces.

An Alternative in Communication for Development

The Association of Municipal Broadcasting Stations of Andalusia (EMA RTV), was created in 1984 by a dozen towns who had their local radio stations closed down by government order. Today it has more than 100 member stations and has become the reference of a local network broadcasting model.

The association, whose challenge was to propel local communication and development, changed its name in 1994 to "the Association of Municipal and Community Radio and Television Broadcasters of Andalusia (Asociación de Emisoras Municipales y Comunitarias de Andalucía de Radio y Television - EMA-RTV). From this new perspective the association has worked to promote municipal multimedia projects, assuming the arrival of ICT and its ease of access due to falling costs.

The multimedia project is designed to achieve citizen participation in the communications media, thus contributing to a plural discourse as an alternative to that offered by private-sector projects of a merely speculative character. The multimedia structures integrate radio, television and online information via Internet, thus favouring the channelling of information. In this environment EMA RTV works in the creation of media centres, spaces which offer urban and rural citizens ongoing options both to consult and to create content for its diffusion in different audiovisual supports. The Mediacenter project is aimed at provoking the democratic use of the media, making possible citizen participation.

A fundamental objective of EMA-RTV is ongoing training: training courses in radio and television oriented to satisfy the demand of the market and to update the knowledge of professionals working in local media, so as to encourage the use of new technologies. In the past three years EMA-RTV has imparted some 20,000 hours of training for the professionals of their associated television stations, students and the unemployed, using European funds in collaboration with the Junta de Andalucía and the Andalusian Federation of Municipalities and Provinces (FAMP). The activity is carried out in all of Andalusia's eight provinces.

The activities of the association do not only stem from the conviction that local communication as a democratizing experience is possible through fully professional teams committed to the

[38] La Asociacion EMA fue creada en 1984 y cuenta con 92 municipios asociados y una amplia experiencia acumulada.
[39] Este texto esta extraído del libro: Chaparro, Manuel: Sorprendiendo al futuro. *Comunicacion para el Desarrollo e Informacion Audiovisual*. Frontera, Barcelona/Sevilla, 2002.

task, but should also seek the permanent backing of the different actors in society. Since 1997 all of the association's projects are backed by a Consulting Council composed of relevant figures from the worlds of culture, education, science and social organizations.

The organization's star product is its satellite programming, which defines its network task. After 15 years of existence of municipal radio, they were seeking new ways to optimise the output of ever-more-numerous broadcasting stations with ever-more-disperse objectives. From EMA RTV it was proposed that they work together, using joint content, so as to achieve a greater specific gravity in the society and to improve the quality of the products offered. It was necessary to find new forms of participation and do away with a certain facile criticism, originating principally in commentaries from the commercial radio, associating the municipal broadcasters with the ideological stances of their sponsors in the town halls and the low quality of their content.

For some years the joint productions aimed at giving substance and a unified sense to the work of these broadcasters took the form of audio cassette distribution. The success of this experiment and the increase in productions being exchanged required new, instant forms of distribution which only satellite communication could offer. This was a formula which improved the technical quality of the broadcasts, incorporated the immediacy of live programming and permitted the channelling of advertising to the stations, thus lowering service costs. In 1994 the satellite broadcasts were begun, sharing a channel with the radio service of the Spanish news agency, EFE. In 1998 the association took the leap and contracted its own exclusive channel so as to maintain its programming 24 hours a day. One objective of the project was to promote the cohesion of a territory with an eminently rural character. Sixty per cent of the Andalusian local broadcasters are in towns with a population of fewer than 15,000 inhabitants, and in provinces like Huelva or Cordoba, with 68 and 73% respectively, fewer than 10,000 inhabitants. On the other hand, the challenge was to facilitate the construction of better and more complete programming, without losing local flavour, rather reinforcing it and giving it more presence in the regional context.

This broadcast model, complementary and respectful of the local programs, is the basis of the Local Wave of Andalucía (Onda Local de Andalucía - OLA), the brand under which EMA RTV creates and broadcasts its content. Today more than 60 broadcasting stations use OLA programming daily.

OLA is a service network with a horizontal structure and, therefore, participative. With this in mind, the programming is submitted to the consensus of the Board of Directors and the General Assembly. One part is elaborated by the association's creative team and another is contributed by the stations which are capable of creating useful content for the rest of the partner broadcasting stations. To make this all possible the association encourages the local stations to equip themselves with digital telephone connections. This way any local station can send content to be reworked in the central offices of EMA-RTV and sent out to the network. The quality of ISDN lines permit adequate speed and quality of transmission. All of the local broadcasters can thus be protagonists of the generic production. This is a participative formula which cuts individual production costs and extends the activity of all participants far beyond their local limits.

The programming is elaborated mailing by the association team and in a "capsule" or "micro" format from 15 to 25 minutes in duration. The philosophy of these spaces is to create programs which integrate seamlessly with the local programming without creating distortions. This extends to certain programs of longer duration which are used as "wild cards."

The microprograms are designed for insertion in prime-time slots and concentrate on the diffusion of information which is either absent altogether or given a frivolous treatment in the commercial media, content which requires both good research and the use of the local idiom which is accessible and entertaining for local audiences.

Production criteria are characterized by content which is most difficult for local stations to create, and therefore most lacking in the programming. That is to say, the association's work does not touch upon strictly local themes; those are left to the local stations themselves, while OLA concentrates on more general subjects. The acceptation of the subjects treated by OLA should be generalized. Their programs deal with environmental subjects, juvenile information, employment policies, promotion of rural tourism, parliamentary initiatives with local repercussions, collaboration with the educational community, as well as programs dealing with agriculture, livestock and fishing.

The insertion of these contents and structure of OLA programs facilitates their a la carte use by any of the associated broadcasting stations. The content is programmed a different hours of the day in order to facilitate local hook-ups. Programming criteria makes it difficult for audiences to hear the same content twice, if the station connects over long periods of time. The choice, production and emission of content is the responsibility of a team of experienced producers. The whole OLA team consists of 25 permanent employees which at times of maximum activity can reach 35.

The programming criteria obey the basic principle of offering what others don't, creating material which doesn't already exist or isn't being shown, programs which are useful yet absent from the medium, material which gives new perspectives and reflects values related to solidarity, education, sustainable development, humanism, the desire for change and evolution, trying always to encourage the critical consumption of information.

The OLA's daily informative agenda includes Andalusian news submitted by the local stations, national and international news, with special emphasis on material distributed by alternative press agencies and the AMARC network in Latin America and the Caribbean. This agenda, for its cultural proximity, has priority in OLA programming. The integration of the Spanish and Latin American communities in a single news area tries bring them closer together than the usual economic themes emphasized by large broadcasting companies. Progress and development enclose values which also speak of solidarity, understanding and, why not, of the denunciation of realities which permit the opulence of a minority in the face of the margination and poverty of society's productive sectors. The news service is made up of hourly bulletins and three half-hour summaries in the morning, at midday and in the afternoon.

The OLA service is a pioneering project which has tried to lay down the foundations for a new system of communication designed to strengthen the grass roots media, where participation is a fundamental element, along with positive audience indices within the coverage of each local station. The traditional broadcasting organizations have eliminated citizen participation and annulled, with their network servitude, the development of real, relevant local programming which serves the information necessities of local people. Work which takes into these people and their needs into consideration offers new perspectives of collaboration and understanding; a participative strategy which tries to involve the collective of local stations in the strategic decision making process.

The importance of the sum of microaudiences of these local broadcasting stations in the Andalusian framework is great, with more than half a million listeners daily (Chaparro: 1998). Its coverage of poorly attended territories, far from the privileged circuits which ring the great cities, assures that the local communications media form part of the basic infrastructure matrix destined to overcome the historic lapses which have impeded a better quality of life. This quality of life does not depend solely upon material possessions, but also includes intangible values related to information, knowledge and culture.

The objective of OLA is to cover the tremendous information vacuum which exists in the context of the largely rural geography inhabited by 55% of the population of Andalusia, giving vent to personal aspirations, opinions and participation in the educational system. The potential of these local media to involve their audiences should be used to gain higher levels of development.

Since 1999, EMA RTV also works with television content. Thirty local television broadcasters, partners of the association, receive programs relating to parliamentary news and microfeatures which follow the successful schemes created for the radio. The organization plans to have a satellite distribution channel sometime in 2003. The SADAS project, Andalusian Service for Audiovisual Broadcasting by Satellity (Servicio Andaluz de Difusion Audiovisual por Satelite), a división of EMA RTV, will include both radio and television, with a valid offer open to public community and associated media, as well as the private sector.

Communication Projects for Development

EMA-RTV works on communication projects for development in Bolivia, El Salvador, Guatemala and Argentina where, with its local counterparts, it imparts training in good community radio practices, encourages the creation of local organizations and accompanies the pertinent legislative initiatives undertaken in these countries. In 2001 the solidarity actions of the association moved 500,000 euros, obtained from Andalusian cooperation funds.

The Multimedia Training Center (Centro de Capacitacion Multimedia) ***Atipiri*** *("conquerer" in the Aymara language) is the pivotal project which EMA-RTV has created to carry out its work for the past two years with AMARC-ALC, the Radio and Television Training Service of the Bolivian Catholic University (SECRAD), the Popular Indigenous Communications Centre (CECOPI) and the ADA Gender Network. The objective of the project is the installation of the basic infrastructure for the establishment of a multimedia training centre equipped with a radio transmitter. The group who will benefit from the project is the Aymara population of the Bolivian altiplano. "Atipiri" is the name of a marginal neighbourhood in the city of El Alto, with the greatest indigenous population of Bolivia, with more than 600.000 Aymaras, and the country's second city by number of inhabitants. The city is located at 4,000 meters of altitude, which adds to the difficulties of a population with tremendous deficiencies in living a decent life with few possibilities of overcoming their miserable conditions. The margination of the original peoples remains a grave social problem which requires all types of assistance in creating a new harmony. The Atipiri project is designed to lay down the initial foundations for change based on training in communication and the creation of a radio which serves to defend community interests by creating an effective social fabric.*

A similar project, accompanied by technical and legal counselling, is being carried out along with the AMARC'S Central American office in Guatemala. An itinerant radio team backed up by ARPAS (the Association of Participative Radios of El Salvador) travels through several Central American countries. The immediate objective is to give support to community radio projects and to encourage the creation of new ones. The democratic construction of these countries requires that the development of information policies there not be left exclusively to the dominant mercantile interests of the private sector.

The community radios are Popular Communication Centres which make up training platforms in the use of local communications media in the production of audiovisual content which support local campaigns in favour of a better quality of life.

The situation of political exclusion experienced by the original peoples of the Andean and Central American regions has left them a marginal political

participation in their countries, but at the same time it has strengthened local organizational structures. The local media and the community production centres are vital to project this great advance to their own communities and to the exterior. The project contemplates the media as useful elements in supporting the reconstruction of the indigenous identity and of their citizenship, besides helping in the interaction with other groups of the urban society.

Along with these projects has come the strengthening of the ARPAS network, one of the best organized on the continent, which has suffered in recent years the disruptions of Hurricane Mitch and the earthquakes. Nearly 200,000 euros were spent to reinforce this basic network of radios which covers the entire country and is listened to daily by a wide majority of the population.

The association also works in EL Salvador, with the Foundation of the Word and the Image. The activities of this organization are centred on the recuperation of memory of the Salvadoran people in their complicated existence of battles, repression, revolutions and civil wars. All of this has contributed to a collective historical amnesia which disorients and complicates the transmission of a collection of basic knowledge and experiences needed to overcome past conflicts. The foundation carries out an enormous labour to help the Salvadorean people to recover their history. It takes the form of an open museum which organizes itinerant exhibits throughout the country which incite citizens to contribute to the recuperation of the collective memory, urging them to collaborate in the diffusion of popular culture and the reconstruction of their history. It is a permanent reminder that we must become the protagonists of our lives by remembering not to forget .

The most complex of all the projects being carried out in Guatemala, in collaboration with AECI and Community Communication (Comunicación Comunitaria), a group formed by five associations of community radio broadcasters, is the elaboration of law proposal which is currently in a period of parliamentary discussion. The success achieved when this proposed law entered into the Congress has encouraged the UE to propose a national support plan for community radio, principally for indigenous people. The project, in its draft stage, is included the support policies of the 1996 peace agreements under United Nations supervision. The amount of assistance dedicated to the project will be 700,000 euros and will serve for the creation of a training centre, production and distribution of audiovisual programming. It is to be equipped with a radio transmitter and will be supplemented with five repeating stations distributed throughout the country.

All efforts are aimed at creating citizen values and awareness on the part of local and national authorities in a democratic culture; respect for plurality, revaluation of autochthonous cultures and full citizen participation.

The Globalization of the Community Environment

Communication for development requires the strengthening of networks and meeting spaces which contribute to reflection and the rearming of objectives. The international congresses and the UNARTE Forum, Open University of the Radio, the Television and the New Technologies, (Universidad Abierta de la Radio, la Television y la Nuevas Tecnologías) form part of this strategy. The congresses and working sessions have made possible the union and interchange among numerous organizations and have permitted new experiences which have enriched the discourse aimed at advancing the necessary construction of solidarity.

The congresses have given rise to publications and a permanent forum with the goal of becoming a source of reflection, coexistence and analysis of the reality. UNARTE is an initiative of EMA-RTV, the Chipiona (Cadiz) town hall and the University of Cadiz. The necessity for reflection regarding the development of communication and the mechanisms for assuring future strategies which guarantee the end of inequality have encouraged the active participation of socially committed collectives, citizens, communicators and members of the educational community.

The globalisation of democratic values is indispensable, and the most effective tool is information, a ingredient for progress which we must enlist. Only by assuming this responsibility can we guarantee fair progress between equals.

Betting on the Mediacenters

The multimedia structure which many public and private communications media are adopting facilitates a new conception of citizen participation in the use of ICT. These media unite in their installations the potential of the traditional knowledge warehouses with the tools necessary to manufacture content. All the media have, with time, created their own libraries for internal consulting, a "phonoteque" which brings together vinyl discs and CD's, as well as their own productions. The fusion of these information warehouses constitutes part of the collective memory of the communities for which they work. On the other hand, the same installations permit people to consult these sources thanks to the existence of the necessary audio and video players. With these facilities and faced with a better-educated society, we're looking at a quantum leap from the traditional consumer attitude to that of a "prosumer," assimilating the capacity, the duty and the right to manufacture and broadcast information. The first step in this transformation would be the opening of these warehouses in order to foment the manufacture of messages and their diffusion.

Over the past century the citizen has done nothing more than reinforce his role as a mere consumer of products, technologies and knowledge. The qualitative leap has to come about through the promotion of the citizen's right to access the media, to information technologies and the diffusion of messages via the mass media. The private or public ownership of the media should not be a means to appropriate the discourse and the defence of the general interest.

The Mediacenter should offer the possibility to:

- *Consult information on different supports, function as a "mediateque"*
- *Be capable of creating messages and content with its existing equipment not limited only to use by professionals*
- *Diffusion of materials employing different transmission media: radio, television and Internet*

With the existing multimedia broadcasting facilities, the next step to adapt the installations for an interactive Mediacenter is not terribly complicated. It practically reduces itself to a question of the administration of spaces and available resources. The warehouse should be located in a room which facilitates the combined use by internal staff and citizens. The installation in another room of Internet-enabled computer stations, capable of editing audio and video, would facilitate the process of manufacture.

To take advantage of this potential requires a permanent training program in the use of technology and, therefore, the journalists and technical personnel have to adopt a new, enlarged professional orientation as social mediators, becoming social communicators, catalysts and activists in the expression of the social interests of the citizenry.

Far from being a political proposal, the object of the Mediacenter should be that of assuming corresponsibility in the elaboration of the discourse and community enrichment. These spaces would form part of a new free-time culture, a playful initiative of intelligence and creativity, not unlike the mediateques. For this reason the mounting of the Mediacenter should be considered in its true potential dimension as a citizens' meeting place for the development of creative and recreational activities.
The democratisation of the mass media requires these contributions which permit a more plural discourse. Our historical context demands a new state of opinion which is only possible based on horizontal development, without mercantile conditioners. The creation of a network of Mediacenters should be a priority objective in the development of a new map of participative media.

The University and the Information Society: A Reflection for a Different Approach

(Silvia Arias Careaga, Director of the Office of Action for Solidarity and Cooperation, Universidad Autonoma de Madrid)

[…] the universities should also play a very active role in the promotion and familiarization of the information and communications technologies among the collectives who normally don't frequent their halls, and put these tools at the service of the achievement of more social objectives.

A lot has been written, debated and thought about, from varied sectors, regarding the role that universities should play in the information society challenge.

Their role is undeniable. Universities promote, use and do research in the new technologies. As centres of reception, transmission, diffusion and generation of knowledge, they maintain a close relation from different fronts—research, teaching, practice, etc—with the information and communications technologies. Their use has revolutionized the role of the university professor, in his or her form of transmitting knowledge, of researching, incorporating new tools and new avenues of learning. For example, virtual training has permitted access to education to new collectives and has broken the linear transmission tradition, incorporating a new concept of time and permitting until-now-unknown reach in the transmission of information.

Young university students enter in contact with new technologies in a natural and spontaneous way. They incorporate them as methodology and habitual tools in the search for information, in communication and interchange of experiences, in the presentation of papers, in research projects, in laboratories, classrooms, etc. The coexistence of young people within the universities permits them, furthermore, through constant access, to update these tools continually in a fast and efficient manner.

Nevertheless, the universities should also play a very active role in the promotion and familiarization of the information and communications technologies among the collectives who normally don't frequent their halls, and put these tools at the service of the achievement of more social objectives. These objectives should be designed to foment the social transformation which is taking place in developed countries, in contrast to those which cannot enjoy the advantages which the arrival of new technologies offers, normally for lack of skills, specialized personnel, financing, equipment and material, etc. This is the case in the majority of the countries of the world, and it is in this challenge where universities can be protagonists.

In recent years the universities have initiated strategies and initiatives in the face of this challenge, that of taking the social responsibility for the integral formation of the young people whom the society confides to them, not only formation in strictly academic knowledge, since education is a much greater asset than the simple knowledge of the material. It is also the formation of values which permit young people to acquire the tools for making a contribution to the construction of a fairer society.

The formation should also be aimed at the promotion of social change. The work the universities are doing, or should be doing, can offer solutions to concrete social needs, such as those of sectors which are excluded from their own cultures, the challenges of technology, and the demands of the world of work, and assume in this way a protagonist's role in the processes of human development, exploring and putting into practice new strategies destined to build a culture of peace, solidarity, coexistence and citizen participation.

These strategies used by universities have served as channels for activities such as the formation and promotion of volunteer programs, the development of cooperation projects, social intervention in various fields, the development of programs of attention to the disabled, etc.

The “University: Social Commitment and Volunteer Programs” ("*Universidad: Compromiso social y Voluntariado*") report, approved by the Conference of Spanish University Rectors (CRUE), in July of 2001, was a point of departure to give meaning to many actions which the universities were already working on in this field, but it also has served as a framework to establish objectives and strategies for action in fomenting active solidarity and awareness in the university community.

The objectives and action strategies which are enumerated in this document make reference to the following points: formation and education, research, awareness, structures for solidarity, the sharing of experiences and resources and new technologies and technology transfer.

This last objective is described in the following way:

"the university considers that it should contribute to the extension of the information revolution, reducing the breach between the industrialized world and the developing countries, to that end:

1) It will give priority, as a fundamental factor in the mentioned strategies, to the new information and communications technologies, both for facilitating information and communication between volunteers and professors, among universities, among countries, with other social agents, etc., as for the development of distance learning, fundamental in this field.
2) It will support technology transfer (adapted to local conditions) with the objective of preventing the growth of gaps in these fields. The implication of businesses, financial institutions and institutions with experience in these matters such as the United Nations, should be considered."

This document makes clear the role of the universities in the challenge of the information society focused on the achievement of objectives which permit their contribution in a framework of increased solidarity.

Spanish universities are increasingly active of late with their own structures for solidarity programs. The incorporation of the university’s social commitment vis a vis the new information and communications technologies is still incipient, even though some have already initiated their activities.

The IT revolution in a world dominated by globalisation runs the risk of creating a knowledge market which excludes the poor and underprivileged instead of contributing to reduce poverty and inequality. It is at this point where the universities have a great deal to contribute to the information society, not only from a strictly academic vision of generation and transmission of knowledge, but also through the creation of far-reaching practical initiatives which permit the reduction of the digital gap between countries.

Reducing the Digital Divide: The Experience of the Universidad Autonoma de Madrid

In October of 2002 the Council of Government created the Office of Solidarity and Cooperation (Oficina de Accion Solidaria y Cooperacion) of the Universidad Autonoma de Madrid. This structure was created with the primary objective of promoting the participation of the university community in activities which contribute to social commitment. The creation of the office permitted the centralization under a single structure of all the activities which, until that moment, were being undertaken by our university in the field of solidarity. Its work is currently centred on the following areas: volunteer programs, development cooperation, the disabled, training and research.

Through the volunteer program of the Office of Solidarity and Cooperation, the Universidad Autonoma de Madrid (UAM) set in motion in 2001 a collaboration program with the United Nations Information Technology Service (UNITeS), with the object of reducing the digital gap among countries. This program has also permitted the creation of a unique working network among the solidarity programs of Spanish universities.

The origin of this program is in the visit made by the directors of the solidarity programs of the UAM to the headquarters of the United Nations Volunteer Program (VNU) en Bonn (Germany). This visit formed part of the meetings programmed by the office to become acquainted with and learn from the experiences of other institutions, so as to better define areas of common interest and establish working networks for a more economical united approach.

The United Nations Volunteer Program is the UN organization which supports human development through volunteer programs, and under the premise that voluntary actions contribute benefits both to the society in general and the volunteer him or herself, contributing to a greater cohesion in the society by constructing mutual confidence among citizens. The United Nations Volunteer Program is also the coordinating agency for the United Nations Information Technology Service (UNITeS) whose objective is to increase, through the mobilization of volunteers, the capacities of persons and institutions in developing countries which can benefit from the opportunities offered by Internet and the other information and communication technologies (ICT).

As an outcome of this first visit and later meetings which permitted the definition of strong points of common interest for a collaboration between the UAM y UNITeS, an agreement was signed by the two institutions in the year 2001. The objective of the accord is the collaboration in volunteer work aimed at closing the digital gap in developing countries.

The agreement permits the sending of students (not only students but also, if both institutions so wish, teaching personnel or administration and services personnel - PAS) as university volunteers, to projects under the supervision of UNITeS in different parts of the world with the mission of fomenting the knowledge of the new technologies in order to go closing the digital gap which exists among countries.

By common accord between the United Nations and the Universidad Autonoma de Madrid it was decided to open this opportunity to the rest of the Spanish universities, so that students and personnel from other universities could also benefit from this collaboration and participate in different projects.

United Nations charged the UAM with the responsibility of coordinating this network, through their office of Solidarity and Cooperation. The form of participation of the rest of the Spanish universities is under the same conditions as the Universidad Autonoma de Madrid. Therefore, all of them will take responsibility within their own universities for the promotion of the program, the identification and selection of candidates, the training of volunteers, the arrangement of tickets and visas, the follow up of the volunteers on the ground and the reception of the reports of the volunteers upon their return.

Thus the program is equally open to all the Spanish universities, both public and private, who are interested in participating. The UAM, as program coordinator, is in charge, among other matters, of convoking the universities and delivering them the information, organizing an annual informative meeting among all the universities and United Nations personnel, elaborating an execution calendar for the different phases of the program and assuring their compliance. Those universities interested in participating are obliged to sign a letter of adhesion to the pre-existing agreement between the United Nations and the UAM which accredits them as participants in the working network of Spanish universities in the UNITeS program.

During the year 2001-2002 the program was launched at a pilot project with the participation of four universities: Universidad de Granada, Universidad de Salamanca, Universidad de Valencia y Universidad Autonoma de Madrid. A total of 10 students were sent to projects in India, Jordan, Ecuador and Honduras. All the projects were focused on new technologies and all the students had been selected in the last phase by the officials of the program of each host country, within the required profiles.

The evaluation of this first year of the program was very positive for all involved: the participating universities, the volunteers and the host organizations in each country. The problems which arose were always related to organizational problems derived from the novelty of the program. Examples of this are the short time dedicated to the publicity of the program and selection of candidates within each university, the limited time for training and preparation, etc.

The on-the-ground experience was considered by the students as highly recommendable in spite of the difficulties of adaptation both to a different country and its culture and to a new work dynamic. The students demonstrated a great capacity for flexibility and adaptation which permitted them to mature rapidly, not only on the personal level, but also in terms of becoming acquainted with the work which an institution like the United Nations has set in motion to retard the digital gap and take new technologies to very different countries, each one with its own identifiable culture.

Some examples of the activities carried out by the students: the creation of websites to disseminate information regarding health, agriculture, etc.; the construction of communications kiosks which permitted the elaboration of rapid and efficient emergency plans against natural disasters, the elaboration of data bases as tools for later projects, the training of locals in new technologies, etc. The contact with other cultures was enriching not only for the students who went out to

other countries to work, but also for their contacts in those countries, who were very appreciative of the students' motivation in sharing their knowledge and experience with them.

The diffusion of the program which the returning students carried out upon returning to their respective universities has permitted us to multiply the experience and motivate other students and members of the university community to participate in the second year's program.

The challenge is to become aware that there is something that all of us can contribute to the construction of a fairer society. It's worth our trouble to collaborate in the achievement of a global information society for everybody.

The ICT's at the Service of Formation to Achieve Socio-Economic Development

(Ricardo Cospedal, Assistant Dircetor of CEDDET[40])

[…] The objective is that the institutions which possess the content be the ones to transfer it, using CEDDET as a vehicle to facilitate the task. The idea was to maximized the principal asset of CEDDET: good management. For that reason the austerity of infrastructures was the predominant note.

The object of this article is briefly to present the experience of the Center for Distance Education for Economic and Technological Development (CEDDET), as a specialized center for facilitating the transmission of knowledge through new technologies. [41] In this presentation we want to touch upon the most relevant aspects of the center's first 18 months of activity. These comments are based on the professional experience developed with the Spanish organizations which have collaborated in the project as well as the relations with the centres of the World Bank distance learning network in Latin America. We think they can be helpful in explaining the current reality of the project.

The CEDDET is a center born officially in December of 2001 in accordance with the World Bank requisition to enlist an organization capable of providing Spanish language content for the recently created Global Development Learning Network (GDLN). This network came about as the World Bank's response to the evidence that training is an essential element to foment development, besides the traditional policies which the WB and the greater part of the multilateral organisms had implemented until then, based principally on the transference of financial resources and infrastructures. The underlying thinking was that the Spanish could transmit their accumulated practical experiences of the last 25 years, especially in questions of public management in the most diverse fields, which have favored socio-economic development in our country.

The proposal was rapidly accepted by the Spanish authorities, the Ministry of Economy assuming responsibility for the development of the project. During this time the CEDDET was passing through different approaches, while maintaining one basic idea: Spain could transmit very practical knowledge to other countries which could be of unquestionable interest to many organizations in their quest for institutional strengthening, thereby improving socio-economic development in these countries. Initially the program conceived essentially to facilitate the transfer of skills and knowledge to Iberoamerica.

Nature of the CEDDET

After analyzing the different legal frameworks for CEDDET's work, the institutional design of the center was created, as well as the necessities in terms of human and technical resources needed to develop the project. The Ministry of Economy actively assumed the initiative, and as the project grew, so did the ministry's contribution in human resources and dedication until the definitive creation of the center. In this launch phase it was notions of austerity and quality which predominated.

[40] The Center for Distance Education for Economic and Technological Development (Centro de Educacion a Distancia para el Desarrollo Economico y Tecnológico), sponsored by the Spanish Ministry of Economy, the National University of Distance Education (UNED) and the World Bank, integrated in GDLN.

[41] For more information on the CEDDET and its activities, see their website: www.ceddet.com .

Once the legal form of the project was determined, it was decided to invite the UNED to collaborate, given their experience in distance education, their commitment to new technologies in education and for the fact of being a public university. The UNED manifested their interest to the point of offering their own foundation so as the CEDDET could initiate its activity as one of its departments. However, the promoters of the project felt that the CEDDET needed to create its own entity with its own legal standing insofar as the activity required it.

Until the month of May of 2003 the CEDDET has been managed by a Board of Directors presided over by the Secretary of State for Commerce and Tourism, along with the Rectorship of the UNED, two vice presidents from the World Bank and diverse representatives of the Ministry of Economy, the UNED and the managers of the center.

Currently, after a year and a half of the life of the project, the members of the Board of Directors have decided that the CEDDET is sufficiently mature to supersede the initial stage within the UNED Foundation and constitute an independent foundation of its own. This foundation has begun its process of creation, scheduled to culminate in June of 2003, and will have its own board of directors, initially, chosen from the following institutions: the Telefonica Foundation, Universia[42] and the EFE News Agency. The Ministry of Economy will continue to back the activity of the center as it has done until now.

During this initial stage the contributions of the Spanish institutions involved in the project, as well as that of the World Bank, have been decisive. All of the advances and concrete proposals which were carried out by the organism which assumed the project as its own, the Ministry of Economy, were accorded with the World Bank, giving rise to an interesting debate, especially in matters relative to the methodology to employ and the objectives of the center.

Especially relevant at this juncture was the confidence that the designers of the CEDDET placed in their project, the flexibility which the public institutions demonstrated in permitting experts in the sector to assume leadership and contribute their experience and determination in defending a proposal which, in those moments, was quite innovative—even heterodox—within the framework of the World Bank.

El Development Environment of the CEDDET in the GDLN Network

The CEDDET project could count on the advantage of being born into a network of similar centres which the WB was backing (and continues to do so) in many countries in order to favor the spread of knowledge through the new technologies. Despite the fact that the Global Network for Development Learning has a basic philosophy which inspired its birth and evolution, the truth is that each one of its centers possesses its own idiosyncrasies. Some of the are located in public institutions, others in public administration formation centres, others in universities. Some even count on the collaboration of private companies. The profiles of the people who direct these centers are equally varied. Nor do their strategies and objectives necessarily have to coincide, though all of them share the notion of fomenting the diffusion of knowledge through the ICT's in order to collaborate in socio-economic development.

Bearing this in mind, we should also point out the flexibility which the World Bank demonstrated in accepting the Spanish proposal at a moment in which the GDLN was being consolidated and required a certain uniformity of criteria. The direct work with the directors of the World Bank and a permanent interaction allowed the satisfactory clearing of the initial uncertainties regarding processes, objectives and methodologies. This flexibility has managed to maintain the cohesion of the network and has been one of the key factors in the development of the CEDDET project, as well as other centers around the world.

[42] Universia is an Anonymous Society which does not pay dividends, rather reinvesting them in its projects. It is sponsored by the BSCH and includes 620 Iberoamercian universities, all of the Spanish universities plus more than 500 in Latin America.

In the organizational scheme of the GDLN Spain forms part of the Latin American- Caribbean (LAC) sub-network. It should be pointed out that this region has been particularly active within the Global Network and it is the merit both of the Iberoamerican centres, and the World Bank, to have achieved such an enviable degree of integration. The centers share information, collaborate on the design, publicity and implementation of joint programs, contribute content and finally they are responsible for the logistic structure so necessary in a project of these characteristics. Today we can safely say that the Global Network of the WB is a model which continues to grow and to be enriched with permanent contributions encouraged by the WB through discussions, video conferences, thematic working committees, annual regional seminaries, program exchanges, promotion of common standards, etc.

From our point of view, this reflection on the GDLN Network can be summed up in two basic ideas:

1) Though the network has had flexible management, it has been sufficiently ordered to receive and develop the different national approaches and to permit their integration, thus enriching the network with new ideas and activities. The basic premise has been to develop national projects which, utilizing ICT, contribute to socio-economic development.

2) People who have worked from each country have believed in the idea and have taken care to grow according to their own strategies, always fomenting the cohesion of the regional group and participating actively in the activities which have arisen.

Summary of the Aspects Which Marked the Beginning and Development of the Project

In general we can sum up the commentaries of this introduction by enumerating the principal achievements which made possible the design of the CEDDET as it exists today. And these refer as much to precise events as to questions of strategy and the objectives pursued:

1) The CEDDET was financed, at least in the beginning, principally with World Bank resources. It is a center which pursues socio-economic development through the formation of managers and middle and top management personnel, primarily in the public sector in Iberoamerica.

2) The physical and organizational structure of the center was designed to be light. The program strived to manage resources fomenting a series of actions without aspiring to the building of an in-house infrastructure to carry out its activities, fundamentally online courses. The objective is for the collaborating institutions which provide the contents also to take the responsibility of transferring them, using CEDDET as a vehicle to facilitate this task. The idea was to maximize CEDDET's principal asset: good management. For this reason the predominant note as far as infrastructures were concerned was austerity.

3) In keeping with the previous point, the technical resources used to carry out the transfer of knowledge were regarded as tools, not as ends in themselves. For this reason the CEDDET never aspired to have its own platform, rather to "homologate" some equipment already existing on the market which would satisfy the criteria demanded by the methodology adopted by the CEDDET. Therefore, the technical aspects would be subcontracted, thus facilitating the contact between specialists from Spain's private sector and the public institutions interested in introducing online training in their cooperation programs.

4) The fundamental task of the CEDDET should be to favor this transmission, contributing two fundamental elements: the management of the project and the development of a

methodology for that transmission, as well as the design of processes which permit to meet objectives and quality control questions.

5) The CEDDET should not overlap with other activities already under way in the Spanish public or private sectors, rather complement them by introducing new possibilities to carry out formative programs which, on the other hand, fit perfectly into the cooperation strategy of the greater part of the institutions and some Spanish companies.

6) The center's offering should be based above all on quality. The objective is that resources be utilized en the production of courses directed to a highly demanding sector, due to its high level of professional qualification and because the courses should contribute in a real way to the improvement of process and ways of doing things in the organizations which receive them.

Future Development Strategy

The development of the center foresees the following basic premises for the next two years:

1) Adoption of an adequate legal form: in November 2002 the CEDDET began a process to culminate in June 2003, at which time it would pass from being a department of the UNED Foundation to be a legal Foundation in its own right, constituted initially by three sponsors: the EFE Press Agency, Universia and the Telefonica Foundation. The project will still count on the backing of the Ministry of Economy, which will form part of its board of directors at the invitation of the founders. We also foresee the possibility that other public and private sponsors might be incorporated into the board of directors in the degree that their incorporation might help advance the goals of the center.

2) Incorporation of the private sector. Although the project holds true to its philosophy of cooperation for development, the intention of the sponsors is that private companies increasingly complement the public sector founders in sectors where their activities and those of their Latin American counterparts can be relevant, contributing to the financing of specific projects. Therefore the private sector would participate not only with through methodological and technical assistance, but also contributing content. An example of this collaboration is already taking place in a course co-financed by the Repsol YPF Foundation.

3) Development of internal processes to maintain or increment the quality of services

4) Improvement of the procedure for marketing the courses so as to maintain the offer among the sectors of strategic interest to socio-economic development.

5) Increase in the collaboration among Iberoamerican entities for the development of joint programs and the promotion of knowledge transfer, not only from the technical and management points of view, but also in terms of teaching methods and the use of ICT in the process.

6) Improvement of the platforms and their tools, adapting them to the specific needs of the CEDDET courses. The collaborating companies which supply technical and methodological assistance should offer services better adapted to the necessities of our courses.

7) Incorporation of new training technologies which permit experimentation with other formative experiences

8) Complementing the online formation with in-person work and trying combinations of the two which can increment the sensation of proximity and progressively favor the interchange of practical experiences

9) Subordination of the incorporation of new ICT to the increase in value added to the training offered by the CEDDET. The incorporation of new technologies should, therefore, suppose a notable advance in the methodology without diminishing the possibility of access to the courses for its technical complexity or excessive bandwidth requirements.

10) Priority should always be given to the participation of countries with different levels of development in the ICT field, and whose access to these technologies is on the most basic level possible, essentially the basic telephone network.

11) The constant refinement of the training offer: the possibility to design courses "a la carte," just for a certain region, for a given country or institution, for a given level within that institution, etc.

12) Proportional investment in the quality control system so as the offer maintains its real utility for users. In fact, the possibility is under study of obtaining ISO 14001 certification.

13) The recuperation of costs should remain a secondary objective, though they should be periodically increased so as to test the real interest in the services. Minimum income standards should be fixed which permit the offsetting of at least a significant percentage of the fixed costs of the center.

14) Maintenance of flexibility in all processes of collaboration with the entities which supply content, so that each one can find the solution best adapted to its own particularities and restrictions when developing courses for the CEDDET.

15) Permanent flexibility to redefine the objectives of the center as a function of real and changing necessities, without losing sight of the basic objective of development cooperation through quality training.

16) Making possible the incorporation of other services which assist in the achievement of objectives such as the collaboration in working groups on e-training, consulting for the launching of similar centres, the sharing of advances and results with the rest of our colleagues in the network, participation in training activities in non-Spanish-speaking regions, the encouragement of inter-institutional collaboration, etc.

Characteristics of the Project; Teaching Methodology

Characteristics of the Project

The CEDDET arose with a defined strategy in virtue of the nature of the objectives it was designed to achieve. As a consequence, both the characteristics of the activity of the CEDDET and the services which it offers have a very specific profile which is characterized essentially by:

1) The CEDDET project has a priority objective: quality training to fortify institutions and organizations. Therefore our activity is directed to sectors which

traditionally lack the resources necessary to take advantage of this type of formation. Our primary objectives are very specific, and not concerned with other possible, equally valid objectives for a development cooperation project, such as the massive training of middle management personnel or the offer of a great number of training programs.

2) The training offer of CEDDET concentrates fundamentally on experiences and not theoretical content. The ultimate purpose is to collaborate with Latin American managers in dealing with concrete situations, sharing knowledge and experiences among "colleagues" regarding how analogous situations were resolved in the past by the CEDDET team of managers in the context of their own public or private institutions. Frequently these solutions are not systematized and placed at the disposal of the public in the marketplace.

3) The CEDDET's secondary goals are: to create networks of contacts among Spanish and Iberoamerican institutions and experts, to develop these same networks among regional experts, strengthen institutions or support an ongoing training program.

Most Important Aspects of the CEDDET Courses:

As a result of these premises there are some basic characteristics which, until now, have been common to all of our courses:

1) They have a duration of 4 to 12 weeks and permit an intensive training. They require, therefore, a dedication of two-and-a-half to three hours daily for two to three months. That is to say, they are generally short courses, but with sufficient depth to permit intensive quality training.[43]

2) The groups are from 25 to 30 experts, in the majority public officials who occupy management of pre-management levels. Other participants admitted to the courses have been university professors, directors of public companies or representatives of associations (business, municipal, research, etc.)

3) The content providers are mainly Spanish public institutions (ICEX, CNMV, CIEMAT, Ministry of Justice, INAP, Social Security, Energy Directorate, etc.). We also contemplate the possibility of offering content imparted by educational institutions (universities, university institutes, training companies, business associations, etc.) , businesses or other organizations, as long as they comply with the premise of developing courses which transmit practical experience which can improve management practices in countries which need it. In this second case we try to assure that some institution, either public or of recognized prestige, endorse the content of the course.

4) The methodology applied is the so-called "virtual classroom," as opposed to other self-instruction methods. We develop our courses to facilitate a great deal of interaction between professors and participants, as well as among participants themselves, given that many of them are colleagues who occupy similar positions of responsibility in different countries.

[43] An exception to the usual duration of our programs is the International Masters in Tributary Administration. Recognized as a master's degree by the UNED, its contents are provided by the Institute of Fiscal Studies, the State Agency of Tributary Administration and the UNED, besides the institutional collaboration of the Iberoamerican Center of Tributary Administrations (CIAT).

5) In order to identify the demand for knowledge, we are guided by our network of centers of the World Bank in the region; the opinions of the content-providing institution, since almost all of them form part of Iberoamerican networks in which these subjects are discussed; and the direct demands of institutions in the countries where CEDDET works.

6) The content of the courses illustrates practical experiences, especially in questions of state reform, which have been carried out in recent years in Spain, but incorporating the most recent tendencies in each case ("best practices") worldwide.

Precedence of Participants CEDDET Courses (till 19.05.2003)		
Country	***Number of PARTICIPANTS***	***% TOTAL***
Argentina	*31*	*8%*
Bolivia	*40*	*11%*
Brazil	*7*	*2%*
Chile	*30*	*8%*
Colombia	*27*	*7%*
Costa Rica	*32*	*9%*
Cuba	*8*	*2%*
Ecuador	*39*	*11%*
El Salvador	*10*	*3%*
Spain	*2*	*1%*
Guatemala	*5*	*1%*
Mexico	*11*	*3%*
Nicaragua	*37*	*10%*
Panama	*2*	*1%*
Peru	*52*	*14%*
Puerto Rico	*2*	*1%*
Dominican Republic	*29*	*8%*
Uruguay	*3*	*1%*
USA	*2*	*1%*
Venezuela	*2*	*1%*
Total Students	***369***	***100%***

Most Relevant Aspects Which Have Influenced the Activity of the CEDDET:

Regarding the offering of services, the CEDDET has had to pose a series of key questions in order to initiate its activity in an incipient and complex environment like e-training. Among them the following stand out:

1) Selecting the best suited methodology for the objectives of the CEDDET and being flexible so as to be able to adapt it constantly

2) Avoiding overlapping responsibilities with the private sector and the training programs already available in the countries where CEDDET works

3) Harmonizing our programs with the processes and necessities of the World Bank's GDLN network, so as to achieve full integration with new partners of a different sort

4) Offering content to the public sector with the special characteristics of the course participants

5) Pricing policies for the courses and charging for support services of the centres of the GDLN network in Latin America

Principal Conclusions and Results Achieved by the CEDDET Project

3.1. Conclusions:

The following are some of the most important conclusions which we have drawn after carrying out 20 training programs over our first year and a half of activity:

1) We have verified the fact that the technological and psychological barriers in Iberoamerican participants does not constitute a difficulty if the courses are correctly designed from the point of view of teaching methodology and with technical resources which require narrow band width, essentially the basic telephone network.

The personal relationship which is established between participants and professors is even closer than that of in-person training, given the intense level of communication between them and the fact that the participants are highly qualified professionals who share many of the same daily problems in the management of their organizations.

2) The fundamental factor in the course offer is quality. Faced with the enormous course offer available, we should offer a product which is differentiated from the rest. The organization has made a great effort to render a service which is very well adapted to our "objective client." CEDDET quality has come about thanks to two factors: the control of content and teaching methodology, as well as personal attention adapted to the institutions which participate in the courses.

3) The publicity for the course is a vital aspect and, in our case, we have to coordinate very closely with the activities of the content providing institutions, taking advantage of their networks and the power of their images of recognized prestige in Iberoamerica.

4) The courses are designed to be taken by professionals of different countries. This implies a wide diversity of problems and institutional development, but key questions shared by all of them are treated in such a way that the courses are considered useful by all, regardless of their countries of origen.

Principal Results Achieved by the Project:

1) Recognition on the part of the participants of the quality of the training

2) More than 800 participants in CEDDET activities, between online courses and video conference seminaries

3) A notable impact on the institutions. Normally those who propose a candidate repeat in other courses

4) Professor satisfaction levels are high; professors have shown a generalized willingness to repeat similar experiences. An unforeseen secondary effect of the program has been the development of online formation within Spanish institutions for the training of Spanish civil servants.

5) The creation of a publicity network for the marketing of courses. This network requires constant updating and fine tuning.

6) The co-financing of our courses in the ratio of 60 % by CEDDET and 40% by the content providing institution, in those courses subject to double sponsorship

7) A high degree of integration in the Latin American-Caribbean sub-network of the GDLN

Total Participants in CEDDET Activities (till 19.05.2003)

	Number of PARTICIPANTS	***% TOTAL***
Course Students	*369*	*38%*
Participants in Global Dialogues	*591*	*62%*
Total	***960***	***100%***

Principal Difficulties Encountered

The principal problems which have arisen in this year and a half, both in terms of startup and the running of the project have been the following:

1) The definition of the processes of quality control. The particular nature of the project, of the courses and the participants obliged us to develop new processes and procedures which could not have been imported from existing organizations. It has been necessary to exercise a permanent control of quality, which has required at times innovative solutions.

2) The publicity for the courses. The publicity represents the culmination of the effort spent on the design of the course and must be perfectly focused so as to maximize the return on investment. Since we work with a limited budget, especially for publicity, it must be very selective and well coordinated with the public institutions in order to take full advantage of their networks. This solution has permitted us to limit advertising costs, but has required a heavy investment in terms of the time spent on the task by CEDDET personnel.

3) The insertion of the Spanish center in the Iberoamerican section of the World Bank's GDLN network. Belonging to an established network facilitates some aspects, but it also entails a great deal of coordination and unlimited information sharing. It is equally important to know how to adapt to the necessities of the network and to facilitate the standardization of processes while respecting and contributing to develop the network's established norms. The integration in the

GDLN network permitted us to gain the confidence of our colleagues in Latin American centres. It was essential to obtain an unreserved collaboration, especially in the promotion of events. In these moments we are in a second phase in which we are designing new collaborations in the field of content, but with the advantage of the experiences of the pilot projects.

4) The design of programs in Spanish public institutions. The characteristics of the public sector have marked certain processes, as well as the work rhythms. Little by little the improvement in processes has been notable, despite certain insuperable barriers, such as the signing of agreements, the adaptation of the Spanish administration's legal procedures, the flexibility in questions of co-financing adapted to the characteristics of each institution, adaptation to the public normative to assure transparency and the publicity which this requires, etc. In spite of the time invested in these details, we have achieved in return an institutional endorsement which permits us to associate our offer with the prestige of the institution which provides the content, a crucial factor in a project like the CEDDET.

5) Collaboration with the private sector. It was limited in the first phase, and concentrated mainly on technical and methodological support.

6) We have also collaborated with vital sectors where the private sector is absolutely necessary to achieve a complete transfer of experiences, such as in environment, energy, quality control, etc.

7) The homologation of e-training companies: technical and methodological resources. This has been the method chosen by the CEDDET to diversify their offer of support services. It came about through the public tenders which assure the transparency demanded by the WB and the Spanish administration, while at the same time it permits us to obtain more competitive prices. Nevertheless, the lack of our own platform, a decision taken from the outset, has also required a great investment in time in defining with the different companies the form in which work should be presented in order for it to conform to CEDDET methodology. The result has been satisfactory insofar as the selected companies have developed high quality work, even though the process took its toll on CEDDET's already scarce human resources.

8) Personalized follow up, with limited resources, of the courses. This has doubtless been the principal factor in the quality of the courses. The design of the processes to carry out a close follow up of participants implies great cost both in economic and human terms, but it has been the decisive factor in profiling strategies, modifying process and adapting the services. The increment in the volume of courses will require a suitable solution to permit the project to continue to improve processes. This may require an increase in human resources.

9) Partial recuperation of the costs of the courses. Pilot experiences were carried out, endorsed by the content providing institution, which permitted marketing limitations to be offset by the institutional prestige of the content provider. This prestige factor also seems to be highly valued by course participants. The project maintains a philosophy of development cooperation in maintaining subsidized prices. The beginning of activities demanded a rapid reading on the project's viability. Once this matter was successfully resolved with the results of the first courses, the CEDDET studied the possibility of recuperating part of the costs of the courses, and this was successfully implemented.

10) Course management with the participants' own specialties: subsidized prices, participants with responsibilities in organizations, institutional relations with the organization, etc. We have had to adapt the methods of the companies specialized in e-training to the characteristics of our participants. This effort has permitted us to achieve a relatively low level of course dropouts (around 20% over all courses). We have also had to adapt processes, for example, forms and the form of processing them, the sending of information to course participants' institutional superiors, etc.

11) Importance of institutional relations: sending of information to the directors of organizations involved in the project, institutional publicity, adequate forms for the presentation of candidates, etc. A great effort was made to maintain smooth relations with the institutions which propose participants for our courses, both to assure their maximum possible rigor in the selection of candidates, and to make them aware of the fact that the courses were making authentic contributions to their organizations. When a participant fails to live up to expectations, the corresponding reports are sent to the institution in question. This also permits a selection process for the institutions which demand services. Questions of institutional relations have, both in Spain and in Latin America, have occupied a significant proportion of the time dedicated to the project as a whole.

3.9. Infrastructure

By “infrastructure” we understand the set of technical solutions which constitute the nexus between the content offer and the demand of users. An adequate technological infrastructure is a necessary condition, though not sufficient in itself, to guarantee that the information society become a reality in the achievement of development goals. In spite of today’s advanced level of technological development, the expansion of the information society is quite a different matter.

As Telefonica make clear in their report, *“The Information Society in Spain 2002, Present and Perspectives”* the deployment of infrastructures demands massive investment which requires establishing a balance between demand and available financial possibilities. For this reason the development of infrastructures is one of the most complex points in the process of creation of the information society. The great investments create significant entrance barriers and permit important economies of scale and reach to established operators. For this reason, a legislative framework is necessary which balances the negotiating power of all players and promotes competition in the interest of a guaranteed universal service. As the Auna Foundation’s “eEspaña 2002” report points out, a regulatory framework, which derives directly from the coherence of the norm with the structural economic reality on which it must operate, provides a stable place in which the tools are configured which permit the functioning of the model of creation and maintenance of infrastructures.

For developing countries the configuration of a legislative control framework requires a consistent democracy as well as strong and credible institutions which instill confidence in investors who pertain principally to the private sector.

On the other hand, the necessary infrastructure in countries which are taking their first steps in the information society can be very different from that in more advanced countries. For example, it might be more urgent and more useful to install a telephone line rather than a wideband network, or to create wireless access via radio to a local network than to provide satellite Internet access. Finding the best balanced technological solution permits us to optimize the investment, better satisfy the demands of users and increase the possibilities of its future sustainability. Insofar as the infrastructure is limited but scalable, permitting the evolution of the information society in developing countries, its profitability will be greater both in social and economic terms.

The Information Society and Socio-Economic Convergence[44]

(by Jesús Banegas Núñez, President of ANIEL[45])

[…] Telecommunications, besides being the infrastructure which supports the productive fabric of the economy, has become the system which interconnects operatively all types of organizations, institutions, services, products, persons y objects. Taking advantage of the enormous possibilities offered by this new interconnected economy requires that all of the potential capacity to create wealth be materially integrated into the networks.

Economic and Social Convergence

The globalisation of markets, the dissemination of information and communications technology and the dismantling of the hierarchies born midway though the nineteenth century, are the essential traits of a new economic era characterized by the fact that its principal sources of wealth are knowledge and communication, as opposed to the traditional ones: natural resources and physical work. In this new economy innovation is increasingly transcendent, while intellectual work displaces physical effort in the framework of an essentially unstable world which is in a process of constant change.

In the last half century the Gross World Product has been multiplied by five, exportations by twenty; while they represented eight per cent of world income halfway through the twentieth century, they now represent 27 per cent.

The cheapening and speed of transport of goods and services is converting the "global village," not long ago a notion of pure fantasy, into a reality. In the last three quarters of a century, according to a study by the World Bank, the cost of transport and telecommunications have been drastically reduced:

- Marine transport, 70% in the last 70 years
- Air transport , more than 80% in the last 60 years
- International telecommunications, more than 95% in the last 50 years

The transmission capacity of transatlantic telecommunications networks was multiplied by 60 in the decade 1986-1996, and that of the transpacific networks by 400.

A measure of the rhythm of globalisation is offered by the parabolic growth, both in commercial traffic and in international telecommunications. Even after the relative failure of the latest conversations of the GATT in Seattle, the average world import taxes have continued to drop to the point of mere gestures in many cases. The economic barriers—and there are others no less important – are today practically nonexistent between the principal world markets.

Given these circumstances, it is fashionable in the world today to debate between "Globalisation yes" and "Globalisation no." Since the planetary diffusion of information and communications technologies, along with the liberalization of markets, they are the principal driving forces of the

[44] This article contains arguments developed more fully in the book "La nueva economía en España", about to be released by Alianza Editorial.

[45] The National Association of Electronic and Telecommunications Industries is an organization constituted under the Law Regulating the Right of Union Association, whose object is the defence, promotion and representation of the professional and collective interests of its affiliates.

phenomenon of fashion. We are therefore obliged to take a critical view of the influence of ICT in the process of economic and social convergence of nations.

From an economic point of view, Rafael Myro (2001), maintains that:

- "Globalisation is unstoppable in the long term, but mouldable in the short and medium terms; it is a phenomenon which we have chosen and which we can and should manage responsibly.

- There are many signs that the liberalization of exterior competition favours economic growth, and few signs which refute that conclusion. On the plus side we see the homogenisation of the macroeconomic management guidelines or countries.
- The fight against inequality and poverty must be intimately linked with the process of globalisation; precisely because globalisation contributes to economic growth, it would be unacceptable if it did not contribute to economic levelling."

According to Maddison (1995) and the UN (2001) we observe that between 1821 and 1870, the growth of the average per capita income was 0.9%. Between 1870 and 1913, the first globalisation pushed it to 1.4%; between 1914 and 1950 it fell to 1.2%, and between 1950 y 2000, the second globalisation has again pushed it upwards, reaching 3%. Whereas in 1950, 80% of the world's population lived in abject poverty, today only 30% remains equally poor. This may be a high percentage, but is still 50 points inferior to the index at the beginning of the globalisation process.

In one of the most recent, most complete and rigorous analyses of world income inequalities, Xavier Sala i Martín (2002) concludes that the world is increasingly rich and that, though in 1970 the average income was close to the poverty level, today it can be considered middle class. The index of poverty is declining. While in 1970 fully 20% of the world's population lived on less that $1 per day that percentage has been divided by four, registering 5% in 1998. Also in 1970 some 44% of the population registered a daily income of less than two dollars. In fact, there were 400 million fewer poor people in 1998 than in 1970.

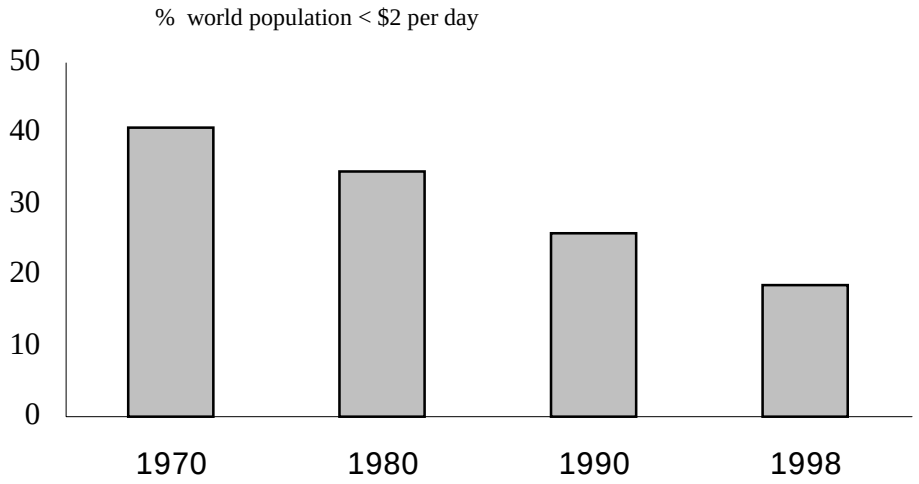


Figure 2. The decline of poverty with globalisation. Source: Xavier Sala i Martin (2002).

The inequality as a result of globalisation does not appear anywhere; to the contrary, the differences have declined in the last two decades. The real problem is Africa. If it was the

home of 11% of the world's poor in 1960, in 1998 this figure reached 66%. In the same period Asia went from 76 to 15%.

In a recent and well documented book by Bjorn Lomborg (1998), the author presents data which show clearly how globalisation and the subsequent diffusion of technological progress, far from aggravating economic and social divergence, reduces them considerably:

- If, until 1950, one in five children died in developing countries, today the rate is "only" one in 18; the same rate as in developed countries just 50 years ago.
- The number of people in the world who are victims of hunger has fallen from 35% in 1970 to 18% today; and projections foresee the possibility of further lowering that figure to 12% by the year 2010.
- Income in industrialized countries, and in developing countries, as well, has tripled in the last half century, while poverty has diminished; along with the differences between rich and poor countries. If the rich countries have more ICT, poor ones have improved access to drinking water, health facilities, energy and infrastructures.
- The number of working hours has been halved in the last 120 years, and, since we live more years, the time dedicated to leisure has multiplied even more.
- In the Third World the index of illiteracy has fallen from 75% to less than 20%; while university education has grown 400% in the last 30 years.

The UN, on its part, through its annual report, "Human Development Index", has for some time reflected a spectacular improvement in the conditions of life in developing countries. Paradoxically, according to Nicholas Crafts (2000), they do not emphasize national accounts. For this author, "during the last 50 years, the defects in economic growth were not due to globalisation, rather to errors in macroeconomic policy and banking system and institutional failures."

Technological Impacts	
Life Expectancy	⇧
Infant Mortality	⇩
Illiteracy	⇩
Scholarization	⇧
Personal Income	⇧
Integration of Women	⇧
Carbon Dioxide	⇩
Energetic Efficiency	⇧
Democratic Elections	⇧

Figure 3. Technology and Quality of Life, Source: Human Development Report UN (2001)

In fact, all of the empirical studies of economic growth show a clear social convergence – longevity, Literacy, conditions of life, etc. - between industrial and developing countries,

something that does not seem so evident in all cases from the point of view of per capita income.

This well-founded hypothesis shows the enormous role played by technology not only in economic growth, but above all, in terms of social progress for humanity, which can benefit from the diffusion of the advantages of new technologies in economic regions which are far from the industrialized world which gave rise to them.

Convergence via Technology

According to a hypothesis by Charles Jones (1998): "in certain circumstances, the most backward countries tend to grow more rapidly than rich countries…." This phenomenon, known as "convergence," was belied by William Baumol (1986), who documented its existence but also its absence in many cases.

A possible point of agreement between the two positions with respect to the question of economic convergence could be based on the following propositions:

- Given the same relative level of economic institutions and economic development, the poorest countries should and can grow more than rich countries.
- Technology, in either case, impels economic growth.

The new economy, which today occupies the centre of media attention, is the motor for growth of the most developed economies and poses an enormous challenge for the economies of the periphery, understood as such those which, in greater or lesser degree, try to approach the developed countries in terms of economic and social level. Within this category we find all the countries and regions which are still a long way from converging with the leaders, both in income and in social progress.

In recent years, according to various studies, there seems to have been an increase in the difference in per capita income between the richest and poorest countries, to the point that they found it necessary to coin a topical phrase: the "digital gap," in order to find a causal link (as yet undemonstrated) between this divergence and the new economy. As the argument goes, the first world, with only 15% of the population, consumes 90% of the ICT and is the home of 80% of Internet users.

In many of the poorest countries a computer costs as much as eight times the average annual income. The two billion poor people in the world – with a per capita income of less than $800 – have only 35 telephone lines and five personal computers for each 1,000 inhabitants, compared with the 650 lines and 540 PC´s of the United States. One of every two people in the most advanced countries are well connected – telephone and Internet –, for only one in every 250 Africans. The monthly cost of Internet as a percentage of personal income is 278% in Nepal, 191% in Bangladesh, 60% in Sri Lanka and 1.2% in the United States.

These Facts Could Not Be More Worrying; Then Add to Them:

- The external economies, associated with networks, help the pioneers to situate themselves in dominant positions which are later difficult to overcome; and the majority of them arise in the most developed countries.
- The change of relations of power from buyers to sellers which Internet facilitates, punishes the producers which contribute less value added, who tend to be located in less developed countries.

- Investments in advanced technologies remunerate investors more than conventional investments. They attract, therefore, more financial resources, which are subsequently lost to alternative projects.

Although these considerations incline one to pessimism, other, no-less-convincing arguments open the way for the hope that the ICT's might be able to help the countries and regions of the periphery to narrow the distances with the most advanced countries.

The developed economies can only continue to grow through improvement of productivity, technological innovation and improved management methods. Jones (2002), analysing the "sources of economic growth in a world of ideas" points out that educational level and research and development are the two most important factors. Jones adds that these factors cannot sustain past growth levels forever.

The poor countries need much less capital per worker in order to grow; something like eight times less. They can, furthermore, buy successful technologies and means of production at relatively cheap prices in relation to the returns they generate, besides improving considerably the educational levels.

Faced with the question, "To what extent can the ICT's be used specifically to favour economic convergence between regions and countries?" the first evident factor is that computers, networks and Internet reduce communications costs and, therefore, eliminate the frontiers to the diffusion of knowledge. Previous technologies, such as the railroad and electricity, needed decades to filter down to the least developed countries. According to recent data from the OCDE, we discover that their spending on information technologies grew twice what they did in developed countries.

Besides, the new communications technologies permit, with less investment and in a much shorter space of time than in the past, the deployment of advanced networks, even in rural areas with low population density. Today's cellular and satellite mobile communications permit us to connect any region of the planet with the rest of the world at a relatively reduced cost when compared with previous technologies and considering the level of service. These technologies permit developing countries to absorb knowledge and techniques which permit them to accelerate their economic and social convergence. In fact, the residual value of telecommunications networks in developed countries is probably superior to the cost of its replacement, all of which demonstrates that today's relative cost of networks—and certainly computers—is inferior to that of the past. Poor countries can therefore attain the same achievements as the rich with much lower costs.

Internet offers free access to an enormous quantity of information which includes almost every domain of human knowledge, in the cultural world, in economy, finances, markets, technologies, health, education, science, etc. A simple connection permits one to enjoy virtual libraries in places where before there was nothing, not even books. A virtual university, the African Virtual University, utilizes communications satellites to televise courses to students in 15 African countries, who communicate with their professors through email, fax and telephone.

Internet reduces, in many economic sectors, the optimum size which companies need to attain in order to compete, at the same time that it eliminates the distances to reach clients. Small and medium-sized companies in the third world can now compete worldwide; every day we find more examples of transactions of this type which were previously impossible and are now proliferating without limits.

Multinational companies, for their part, are now finding more facilities to decentralize their production, especial in terms of intangible content. Any activity, and every day there are more,

which can be converted into electronic information, either analogical or digital, can be freely transported to the place where its production is most competitive. The poor countries have a great deal to gain in this way. The call centre, an activity which is growing exponentially of late, represents a good example of de-localization; a growing number of employees in less developed countries now works for companies in the most advanced countries.

Information technologies permit us to bring less developed countries and regions nearer to the more advanced areas, which is not to say the IT are a panacea in themselves. In this connection a country's economic, social and political institutions play a capital role in taking advantage of the opportunities which the new technologies offer. The opening of markets, legal security in public and private contracts, the protection of property rights, the existence of a legal system to guarantee an efficient financial market, the improvement of education are measures necessary to permit information technologies to grow and flower in the form of sustained development and economic growth.

The developing countries, according to an UNTAD study, pay three times what rich countries pay for communications services. Twenty hours of Internet access costs $90 a month in México, the equivalent of 15% of their per capita income, compared with $25 in the USA, a mere one per cent of their per capita income. In Africa the situation is even worse; the monthly cost is $200.

Matti Pohjola, a Finnish economist, analysing the relation between investment in information technologies and economic development in 39 countries, in the period 1980-95, found that in the developed countries there was a positive correlation between the two concepts, whereas in developing countries it was not so evident. This suggests that in the latter countries, besides investing in telecommunications and IT, they need other things, such as those we discussed earlier.

It is not casual, rather causal, with the policies applied in each region, that the East Asian countries should have developed more than their Iberoamercan or African counterparts. Sun Bae Kim, a Goldman Sachs economist, calculates the gains in productivity derived from information technologies will be greater in the emerging countries of Asia than in the richest economies.

Although it is still too soon to draw categorical conclusions in the matter, everything seems to indicate that, to the degree that the institutional conditions are propitious, information technologies can be a powerful medium for growth and economic convergence between rich and poor countries.

The Information Society

The proliferation and use of the electronic technologies—IT and telecommunications—has generated for some time now such expectations that it has configured a new social paradigm which, with the name "information society," is triumphing in political and social spheres of industrial countries with extraordinary good fortune in the media.

This Information Society is that which, disposing of advanced –and still evolving-- technological means, which support and facilitate the treatment and transmission of information, uses them instrumentally and creatively in intellectual, productive and social processes at its own convenience. Their objective is to increment scientific knowledge, technological innovation, productivity and economic growth and, ultimately, the conditions of life of their populations.

In order for the interrelation between technology and its human uses to achieve the greatest possible economic and social advances, two conditions must be met, one absolutely necessary

and the other sufficient. The society needs to be equipped with technological means which are adequate in quantity, extension and cost, such that, if possible, they might be accessible by everyone in the society. But, since technology which is not used lacks economic and social utility, it is necessary to educate and encourage people to use the new technologies.

The information society represents a great opportunity related to the premise that most people are connected with their computers and other electronic devices to communications networks, specifically to Internet, which permits them the universal interchange of knowledge and information. This possibility includes information the most elemental sort up to the most sophisticated scientific and professional applications, as well as entertainment and mere casual communication.

This new form of social interaction has been interpreted by Manuel Castells (1997) as a Network Society, thus designating the new forms which are taking social, production, consumer, interchange and power relations (Himanen, 2001).

A fully interconnected society makes possible an as-yet-unknown equality of opportunities. Access to information, education in general, professional training, culture, science and pure entertainment, is today easier and cheaper than ever.

The content available in Internet in the form of data, text and images, grows exponentially; those who are connected cannot access only all existing information but they can also increase it with their own contributions, either freely or being paid for them.

The web is, essentially, interactive. There we can receive or give, buy or sell. People, businesses and institutions can use at their own convenience, the attributes of the web in order to advance their own agendas, whether altruist or egoist, in a moral or material context, to compete or collaborate, and all of this within a framework of individual freedom and responsibility which potentiates overwhelmingly the enormous creative possibilities of the human being.

To access the content of this new information society it is necessary to be connected to the web, have computers and, above all, know how to use them. In order to enjoy the opportunities that Internet offers on all sides, we must confront a triple challenge: increase the social penetration of telecommunications networks, disseminate the use of computers and educate people in the use of the new technologies.

For Francis Fukuyama (1999), “a society based on information tends to produce greater quantities of two things which are highly valued in modern democracies: freedom and equality. Freedom has been multiplied exponentially through Internet, and longstanding hierarchies have begun to crumble.”

It is unthinkable that any country could progress in the future without being economically and socially interconnected, that is to say, without counting on the appropriate telecommunications networks. The so-called “universal service” is therefore an essential objective, the achievement of which must concern all governments. Universal telecommunications, like literacy in the recent past, will be a decisive factor for economic and social development.

The universalization of telecommunications services has been a political ambition, originally associated with the concession of monopoly regimes and now, with the liberalization of markets, with the dominant position of incumbent operators.

In the European Union the issue of universal telecommunications services formed part of the regulation of EU governments, in accordance with the recommendations of the Commission at

the dawn of the liberalization process. In the United States, however, this concept hardly forms part of the socio-political life of their telecommunications. Both the European and the United States positions, have their reasons for being. While in the United States the penetration of telecommunications services—thanks to a successful policy of incentives in the 1940's—have been practically saturated for some time now—more than 60 lines per 100 inhabitants—the European case is different. In contraposition to the Nordic and Central European countries, which are at the level of the United States, the Mediterranean countries are still from reaching the equivalent level.

The historical reasons which justified the objective of a universal telecommunications service have been hugely incremented by the demands of a new interconnected economy.

"Universal Internet access will not resolve all social problems, but it will be a great step in the right direction," says Freeman J. Dyson (2000). Telecommunications, besides being the infrastructure which supports the productive fabric of the economy, has become the system which interconnects operatively all types of organizations, institutions, services, products, persons y objects. Taking advantage of the enormous possibilities offered by this new interconnected economy requires that all of the potential capacity to create wealth be materially integrated into the networks.

Thus, to the more-than-justified historical reasons for the universalization of telecommunications services, we must now add those of an interconnected economy which augurs so many good opportunities to those are connected to it, and promises such economic and social exclusion to those who are outside it.

Towards a New Telecommunications Model

(Jorge Perez, Full Professor of the ETSI of Telecommunications of the UPM[46])

[…] For developing countries the problem of the gap is more complicated, since their countries lack the funds necessary to undertake the investments. And private investment will remain reticent until perspectives improve. For the moment, the solution for these developing countries is to bet on mobile voice communications, and to create as many public access centers as they can while other solutions based on wideband come online in their countries. Clearly the model which was exported to them was not valid in resolving their crisis situations, as they were trapped between their low level of infrastructures and the lack of income to improve them.

The regulation model for the development of telecommunications networks and services has passed through various stages, from the original conception of Theodore Vail, in 1907 in the United States, until our days. The point of departure of the traditional model was a monopoly situation adapted to the circumstances imposed by the legislation which considered telephone service as universal and the objective of extending it rapidly till the waiting lists were eliminated. With regulated tariffs, whose lucrative margins in long-distance calls permitted the financing of the deployment, a model was created of slow but constant investment and deployment. This model can be denominated "crossed subsidy."

Once the developed countries eliminated their waiting lists, the model lost validity, particularly since they were immersed in an epoch concerned with globalisation and the need to open markets. The regulation model then took the form of a limited competition, through private infrastructure oligopolies and free competition in services. Thus the way was opened for globalisation, competition was favoured and the way paved for the future convergence of operators and content providers. This model foresaw fixed networks privatised in the hands of existing monopolies, with a brief period without competition in places where it was necessary to provide services, and the later introduction of competition. This would benefit from wholesale services provided by the existing operator. In mobile networks, where the investment playing field was more level, free competition among private oligopolies was the model from the outset, with vertical integration of operators in the offering of services.

This same model was exported to developing countries, where the penetration of telephone services was still low and the waiting lists were long. The model seemed favourable for these countries, since private capital from the exterior could finance their infrastructures and thus extend services to the whole territory.

This model worked well as long as the stock market bubble lasted. The resulting easy money went into investments which, theoretically, were to eliminate waiting lists in developing countries and create new infrastructures for them. This would lead to competition among network platforms (mobile, cable, DSL, satellite…). In the case of the developing countries the financing was mainly foreign, while for the rest the it was with domestic capital.

For reasons which are now the subject of a certain consensus (inflated expectations, tardiness in the availability of new technologies, over regulation, high levels of indebtedness …) the bubble burst and the model began to show its deficiencies. The financing, as it had been functioning, was no longer viable, but neither was it possible to return to the cross-subsidized model, since the introduction of competition had made prices drop to levels which had produced abnormal profits in times of monopoly with fat margins. With the incumbent operators obliged to share their infrastructure (interconnection and fragmentation of the loop) with their competitors,

[46] Universidad Politecnica de Madrid

and losing telephone traffic to mobile operators, the only way forward for the fixed network operators lay in the deployment of wideband infrastructures and services.

However, investing in infrastructure and competing in wideband services, while sharing their networks, is something which the dominant operators don't seem willing to admit. The reason is that the wideband business lies not in Internet connection—just 45% of network resources, producing only produces 8% of income. This is opposed to voice services, where calls from fixed to mobile phones consume only 3% of the capacity of the network but produces 20% of income. If voice services are to finance data services to guarantee the investment in wideband, it will be necessary to promote alternative infrastructures in fixed networks. The tendency in developed countries is to translate the mobile model to wideband, in such a way that produces competition in infrastructures (cable and DSL, fundamentally) and creates a consolidation of operators.

For developing countries the crisis of the model prevented the deployment from being completed so that fixed networks could fulfil the necessities of universal service. The mobile operators, for their part, have a better response, becoming an alternative for voice but shutting off in this way the competition which should have taken place in fixed networks who, without the voice market, could not finance the necessary investments. Besides, the deployment of mobile technology does not guarantee, for the moment, a wideband data infrastructure, and this necessarily mortgages the development of the information society. Access to the information society led some countries, for example South Africa, to adopt a redefined universal service, with the installation of collective centres for connecting to Internet. These, while capable of extending the service, in fact did not encourage the extension of the network. Besides, since the program was carried out by the state, it constituted an important distortion of the market.

The solution of installing telecentres to extend access to the information society was transformed in developing countries to alleviate the digital gap, a gap which exists, in terms of infrastructure, fundamentally due to the absence of market in certain zones which dissuade operators from laying out large investments for few users.

Nevertheless, the guaranteeing of wideband access and the sustaining of collective services through investments by the state (the only one capable of assuming these investments of a social character) can produce an important distortion in the market. Politically it is the only possible decision if they want to eliminate the internal gap and universalise access to the information society, but economically it makes the telecentres unfeasible if they are not publicly financed, by coercing private investment in distant areas where they would find an insuperable competition.

For developing countries the problem of the gap is more complicated, since their countries lack the funds necessary to undertake the investments. And private investment will remain reticent until perspectives improve. For the moment, the solution for these developing countries is to bet on mobile voice communications, and to create as many public access centres as they can while other solutions based on wideband come online in their countries. Clearly the model which was exported to them was not valid in resolving their crisis situations, as they were trapped between their low level of infrastructures and the lack of income to improve them.

In the future there will be new elements which will intervene, generating some uncertainty in the models as, for example, the extension of terrestrial digital television as a platform which competes in wideband in rural areas, or voice over IP, which will finish off the subsidy which voice has traditionally conceded data. Other elements of uncertainty, as yet without a solution, are the identity crisis of telecommunications operators and the undeniable success of "social Internet" as opposed to "commercial Internet."

The operators are having difficulty in assuming the process of convergence with the software industry and it is not clear the role which the traditional telecommunications agents will play in the new value chains which will arise after the crisis. Currently, many market analysts consider that companies dedicated exclusively to connectivity should be assimilated by utilities firms. If that happens it would be a curious historical involution back to their starting point.

On the other hand, the success of social as opposed to commercial Internet shows that the paradigm of universal connectivity as a social and public asset—like the telephone in past times—is not definitively buried in the era of digital multimedia content. The reticular architecture of Internet, the peculiar regulation of its organization and the social pressure of the internaut collective tends to convert Internet access into a service with attributes of a public service (impossibility of exclusion and unrivalled consumption) of enormous value, to accede to private values (susceptible of generating economic benefit) which are the applications, services and content which populate the periphery of the web. The occupation of networks by IP traffic and the difficulty which operators encounter to extract profit from that traffic, as we have already said, is an important aspect of the problem.

In any case, the sector finds itself immersed in a mood of uncertainty on all fronts: regulatory, technological, financial and in terms of demand. If we analyse the situation in its historical perspective it bears similarity to previous processes of innovation such as the railroads, the radio, aviation, the automobile... All of these are processes which change society and pass through various phases, one of them, almost inevitably, that of crisis. These phases span the full range of experiences: the modest beginnings which give way to a period of explosive speculation, followed by the birth throes normally motivated by over investment, a fall in demand, a significant increase in debt, the appearance of business failures and fusions. At the end of this last phase, normally there is an ordered settling down of the society which gives way to a process of maturation and extension of the benefits to the whole society. If the behaviour of the information and communications technology sector actually follows this pattern, we find ourselves in a decisive moment.

Logically, any process of innovation implies risk and uncertainty, but also new opportunities for growth and development. Taking advantage of that future has a great deal to do with the information and knowledge society which all the agents involved desire to achieve. In any case, it will be necessary (but not enough) to overcome four bottlenecks which today conspire to block the deployment of wideband:

- The loss of confidence in financial markets
- The environment of instability and over regulation
- The low level of demand and scarce acceptation on the part of users of new services
- The slow development of wideband services

All of the foregoing seems to indicate that, once the penitence for errors committed by the different actors is served, finalized the painful process of adjustment to the dimension and structure of agents to the real demand, once the legislative control environment is created, and with the inestimable help of public policies of promotion of the information society which encourage demand, the telecommunications sector will once again occupy the central role it held in the previous decade.

But once again, in the process of exiting the crisis, there will be great differences between developed and developing countries. The risk that the final result will be the widening of the digital gap is enormous. Only the formulation of strategies (technological, regulatory and

financial) adapted to the particular situation of each country and the development of active policies of interregional solidarity can prevent it.

Private Sector – Economic, Social and Regulatory Impact[47]

(Telefónica)

[…] in order for the applications of the ICT's which are called for to meet the economic and social necessities of the IS can be developed, and done so in a networked way (This is one of the premises which distinguishes the IS.), it is necessary to build on a set of ***"layers" of support****:* ***affordable services*** *on which those applications car run, and* ***content****, as well as* ***infrastructures*** *which support and provide coverage for the new multimedia services required.*

The United Nations initiative to celebrate a World Information Society Summit must be considered by governments and by the private sector as a fundamental option to promote and harmonize efforts to help countries and societies benefit from the advantages of the information society.

In Telefónica we are working to advance this cause with a series of proposals which are described in this document.

1. National Strategies for the Information Society. Public Sector-Private Sector Alliances

The private sector and the public sector must consider one another as strategic allies in the transition towards the information society. On various occasions representatives of the public sector have explicitly recognized the key role of the private sector in the technological advances in networks and applications.

On the other hand, there is a clear political will to promote cooperation between governments and the private sector with the object of developing and executing strategies, plans, programs and actions which make possible real progress in the short term. It is necessary to develop cooperation models between the public and private sectors and to identify natural areas of mutual support where cooperation can produce benefits for both.

It is necessary to count on the participation of the private sector in the definition of national strategies, insofar as it is this sector which will bear the greater part of the investment in the change. If not, there could be very negative impacts on the execution and application phases of these programs. For this reason it is of utmost importance to urge the involvement of the private sector in the initial stages of elaboration of national e-strategies.

2. Governments and Public Administrations as Motors of the Information Society

The private sector underlines the importance of the role of governments in the development of the ICT's and the necessity of adopting initiatives and policies which permit them to assume this role. There is no unique path to the information society, rather diverse possibilities in function of the prevailing economic, social and cultural conditions of each environment. In any case, it is necessary for governments to increase their efforts to encourage the adoption of measures on the following fronts: a regulatory framework which encourages investment,

[47] Summary of Telefonica's contribution to the World Information Society Summit

promotion of the demand for an agreement regarding the real necessities of the citizenry; the use of ICT within the public administration; the launch of online services for citizens and businesses; and the enactment of measures which open the access to the information society for everyone (extension of wideband, awareness campaigns… …).

Governments bear the principal responsibility in leading development towards the information society, in order to narrow digital gaps and proceed to the information processes.

3. Development of a Strategy Vis a Vis the World Information Society Summit

A. An Appropriate Regulatory Framework for the Necessities of the Information Society

The information society (IS) is an ***edifice*** which requires solid foundations: A large part of the IS discussion revolves around identifying what we might call ***key activating factors***: wide-coverage social and economic applications of the ICT's, capable of creating the necessary economies of scale to launch the process of construction.

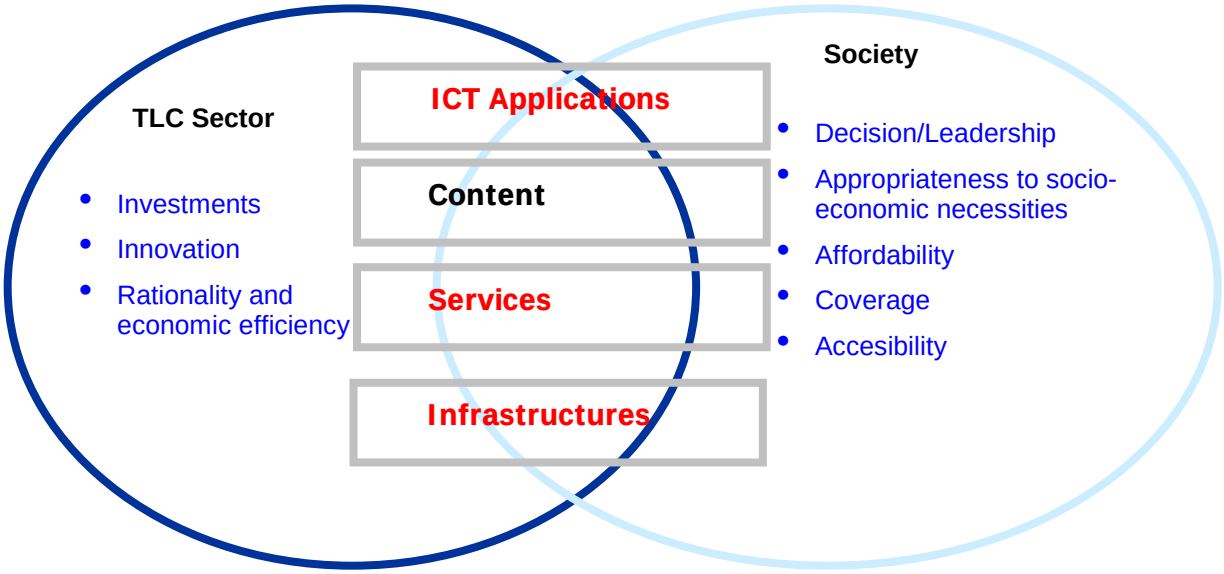


Figure 1: The "edifice" of services associated with IS

Nevertheless, in order for the ICT ***applications*** which are called for to meet the ***economic and social necessities*** of the IS to be developed, and done so in a networked way (This is one of the premises which distinguishes the IS.), it is necessary to build on a set of **"layers" of support**: ***affordable services*** on which those applications can run, and ***content***, as well as ***infrastructures*** which support and provide coverage for the new multimedia services required.

In other words, the deployment of the IS, as well as being a process of intense social innovation, ***requires a no-less-intensive investment effort in infrastructures and services***, not to mention the necessary content.

Some critical points for the construction of an information society for everyone are:

I. **Wideband cannot be submitted to the same regulations as the traditional services.**
II. We must stimulate investment and demand for Wideband.
III. We must guarantee equal access, without discrimination, to content.
IV. We must overcome the concept of universal service.

B. Statement of Principles for a Regulatory Framework Designed to Stimulate Investment

Based on the above reflections, the ***Private Sector*** proposes a series of ***Principles*** on which, in their opinion, the regulatory framework should rest, in order to be sustainable and congruent with current realities. These principles are:

Competition:

➘ ***Regulation of the Defense of Competition***

Traditional sectorial regulation should give way to a situation in which the sector is governed by the rules of the defence of competition. That is, to lighten the *a priori* regulations ***(or ex ante)*** in which an attempt is made beforehand to force competitive conditions, and move to one in which foresees the monitoring and penalization of anti-competitive practices, abuses of dominant positions, distortions of free competition, etc.

➘ ***Model of Competition among Platforms Based on Technological Neutrality***

The evolution of both technology and the markets has led to the telecommunications services associated with the IS being offered from multiple platforms with a growing capacity to integrate multimedia services (voice, data, video). These platforms which are being configured are:

- *Fixed networks*
- *Mobile networks*
- *Cable networks*
- *Satellites*
- *High-capacity wireless access*

All of these platforms compete among themselves, either in all services or by families of services. Therefore they all must enjoy an equal regulatory treatment so as not to induce conflicts nor discrimination among agents. The regulatory treatment which should be accorded all of them—within the essential particularities of each business—should be no other than the regulation of competition.

➘ ***Models of Competion Designed to Promote Investment***

Prioritise the regulations which encourage and reasonably compensate investment, so as not to dissuade investors nor slow the investment process. Abandon the competition models designed exclusively to reduce wholesale and retail prices to the point of jeopardizing the sustainability of the sector, a model which has contributed to the strangulation of the process of expansion and modernization of networks and services.

➘ ***Restrict (if existent) the Regulation of Prices Exclusively to Basic Services***

And, when a cost orientation is required, let it be based on models of cost objectives, so as to obviate subsidies among agents, while permitting a reasonable recuperation of investments.

Legal Stability

➘ ***Legal Security***

Any investment process designed to lay down the infrastructures, networks and services necessary for the IS is necessarily an important long-term process. Therefore, clear rules of the game are needed so that private capital can evaluate and confront the risk which accompanies each decision.

Convergence

➘ ***A More Horizontal Regulation Which Attends the Various Areas in Convergence***

The capacity to adjust both the regulatory frameworks and the organisms in charge of them, to the confluence of sectors managed until now by different institutional departments with different criteria

Content

➘ ***Non Intrusive Regulation Independent of the Traditional***

Avoid the appearance of new sectorial strangulation.

➘ ***Ex Post Facto Control of Anticompetitive Practices Based on the Control of Content***

- Control of the abuse of dominant positions based on control of content
- Assurance of equal, transparent, non-discriminatory access from all platforms

➘ ***Intellectual Property***

- Efficient protection procedures for intellectual property based on principles which benefit all concerned
- Adaptation to Internet of the canons and organisms which monitor and manage authors' rights

Universality

➘ ***Regulatory Innovation for the Development of Products and Services Capable of Incorporating the Most Vulnerable Sectors of Society***

The process of constructing the information society must integrate all citizens in a positive and creative way. Otherwise, the new society which is emerging will be blocked by the social tensions created by a new underclass, the info-poor, victims of a new inequality which reinforces existing ones.

4. Best practices and lessons learned

4. Best Practices and Lessons Learned

What follows is a list of best practices which have been chosen as a small sample of the many which are in use nationally and internationally. All are directly related with projects included in the Spanish contribution to the summit, in an effort to provide concrete examples. We hope in this way to help advance the cause of the information society.

Each one of the sections closes with some recommendations and lessons learned. We hope these will provide some guidelines to help grow the Information society and convert it into a development instrument for everyone.

With the  icon we have indicated the best practices, extracted from the examples included in the text.

With the  icon we have indicated the potentially most troublesome aspects which should be avoided or fixed in order to increase chances of success.

4.1. E-inclusion

Vision of E-inclusion in the Spanish Contribution to the Summit

These best practices and lessons learned for E-inclusion have their origins in the Spanish contribution to the summit, based on this philosophy:[48]

"Under this concept we can also include many questions, some of which impinge upon the question of access to the information society, and others upon questions of content and services. This document is centred on proposing initiatives which facilitate generalised and affordable ***access to the Information society*** *(that is to say, to some extent infrastructures, through the creation of community centres) and as well in* ***basic training*** *for sectors of the society with greatest risk of exclusion, as well as* ***strategies of cooperation and development*** *in this environment (cybervolunteers).*

The community centre acts as a basic nucleus to concentrate the e-inclusion strategy at the beginning, reinforcing a community's capacity. From the community centre activities are designed for specific groups, women for example, and adapted for their particular characteristics and needs in each zone.

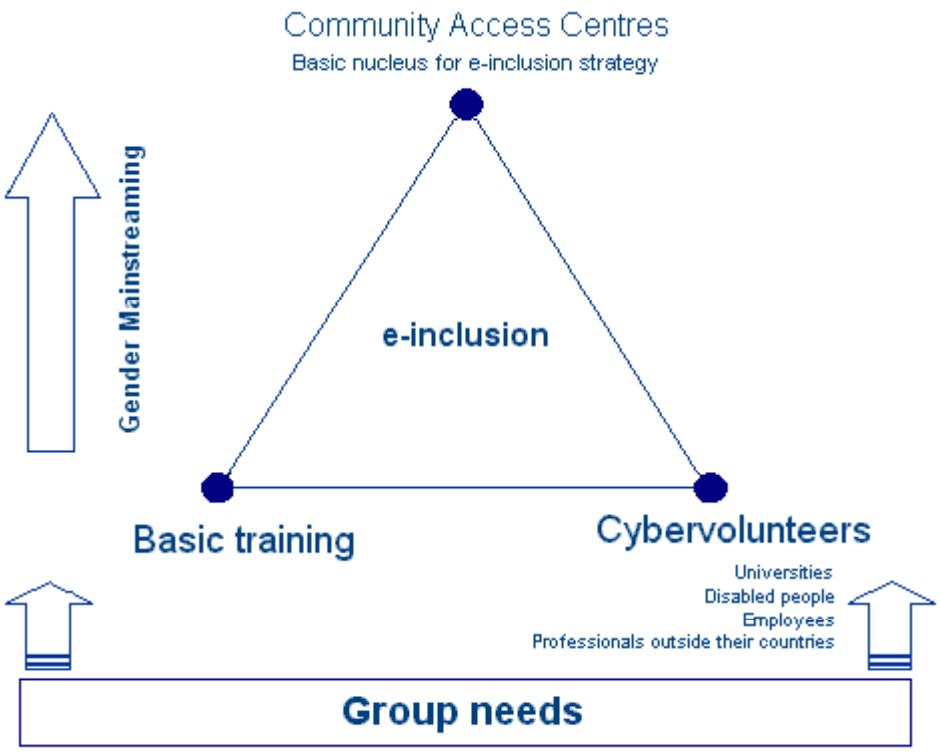
By "cybervolunteers" we mean two concepts:

- ***ICT volunteers****, with in-person activities, which have two profiles; one of a general assistance nature, imparting basic ICT training to different groups with problems of exclusion and margination, or of difficult access via the traditional channels; the other*

[48] The italic letters correspond to the fragment of the Spanish contribution to the World Information Society Summit which refers to.

more specific for dealing with cooperation in applying ICT to development (for example to create epidemiological or pharmaceutical data bases.)

- ***Online volunteers**, people with knowledge, time and the will to cooperate, who offer networked or online help in different areas. This permits a country to count on professional assistance in different areas without having to pay travel expenses and hotels in order to obtain professional help.*



There are two social sectors which can lend invaluable help as volunteers: university students and the disabled. The students can take advantage of this stage in their lives, relatively free of job obligations, to share their knowledge. Furthermore, to carry out an ICT or online volunteer project in any field of knowledge can be a rewarding and useful experience for their future working life. In the case of developing countries, the university, as a place which gathers together the youth of a country in the process of consolidation, is the ideal place to foment sensitivity in future leaders.

On the other hand, the disabled can find in cybervolunteer work a way of feeling useful and integrated in the society, seeing how they, too, can help others without alibis, on an equal footing. In this way they will find that they're not universal receivers, rather that they can act as donors.

Other groups can also be considered for online volunteer work, such as businesses (enterprises which encourage their workers to participate in volunteer programs) and emigrants (people who have emigrated but who still want to be directly involved in the processes of development in their countries of origin.)

What follows is a proposal for an initial set of activities in the field of E-inclusion. The approach used is not organised by social sectors at risk of exclusion, rather it applies to all of them. However, this group of gender proposals could be extended with some specific policies and

applied to the different sectors. It is necessary to integrate gender approaches in E-inclusion policies and initiatives, since it is an established fact that a greater proportion of women are affected by poverty. It is they who make up more than half of the population, and suffer inequality in greater or lesser degrees in all countries. Strategies can be proposed in developing countries to convert women into motors for change, for example, providing them with microbusiness schemes and family health projects which tend to be successful. This more detailed approach could be taken up in later versions of this document. The general underlying idea is to strength the incorporation of women into the information society through training (while keeping in mind the special access difficulties faced by women in general, and women in rural areas or with disabilities in particular.) Other factors are the introduction of new networked work models and policies which reconcile professional and family life, which are made possible by the ICT's. It's about introducing a gender perspective into active policies related to new technologies so as they can constitute a useful tool in increasing the economic power of women, their participation in the public sphere, as well as improving their capacities.

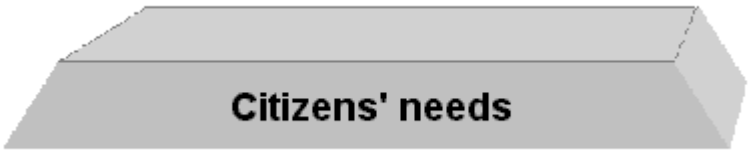
Among other things, we can promote the creation of networks of women and elaborate training and dissemination programs to encourage women to work with this system, by supporting even the establishment of programs designed to consolidate the capacity of women's NGO's in this respect.

Just as in other fields of social and economic life, we must not forget that sexual stereotypes can also appear in the IS. We must encourage through the media the elaboration and adoption of codes of conduct, professional guidelines and other self-regulatory standards, aimed at eliminating sexual stereotypes and promoting a balanced presentation of the images of men and women.

On the other hand, we want to propose a plan which promotes the initial incorporation of the disabled into the information society. Without having to resort to expensive measures, it is possible to try a more imaginative approach in the first steps. For example, the telecentres which we will discuss later in this document could be equipped for the disabled."

4.1.1. General Training Plan

The fundamental necessity of citizens, which must be satisfied in order to guarantee E-inclusion in the information society, is the knowledge of the new instruments, of the information and communications technologies and their uses.



*"[…] to launch a **campaign of general training** in ICT tools for the population of each country before the year 2005, giving priority to the most excluded sectors, such as those in remote areas and groups which fall outside school and workplace settings (the disabled, women, older people, immigrants, etc.). Local NGO's can help define priorities, and should be implicated in projects. Cybervolunteers can also be counted on for training support. (This measure is included in the first phase for E-inclusion of the Spanish contribution to the summit.)*

Best Practices

Mentor Classroom, CNICE

Mentor Classroom is an open training system, free and at a distance over Internet, which has grown and evolved day by day with the contributions of a great network of people who, from different places, offer their work and their ideas. It is based on a training platform which incorporates the latest developments in Internet and offers a wide selection of online courses which is being continually updated.

The training system is based on two basic infrastructures:

- Mentor Classroom, with computer equipment which permits participants to follow the course
- A virtual working environment in Internet where the course training materials are found and where students can interact. It is here that the telematic tutoring takes place.

This training model:

- Is open to any person interested, irrespective of his or her academic degrees or level of studies
- The flexibility of this training system extends to all of the participants in the system. Students can choose their own training itinerary, set their own work pace, the place where they will study (at home or in the Mentor Classroom) as well as their schedules.

Student demand, the number of classrooms and courses all grow each year. More than 55,000 students have participated since 1993. Last year there were more than 19,000 students. This program, which was originally designed to increase educational offerings for small rural populations, has proved to be equally effective

in urban settings. *(More information is available in the paper "Training without Distances" in section 3.6. "E-formation")*

Email: mentor@encina.cnice.mecd.es
URL: http://www.mentor.mecd.es
Telephone: 913 778 348

The Jun Town Hall

On December 27, 1999 the village of Jun (Granada) became the first municipality to declare Internet access as a universal right of all of its citizens. The town hall created the Information society Council and undertook a three-part program:

1) The declaration of the universal right to access to the information society and the offer of services through the town hall website: (www.ayuntamientojun.org);

2) A digital literacy program for the entire population of the village;

3) a program of active teledemocracy, aimed at achieving the direct participation of all the citizens in local politics through Internet. Today the meetings of the town council can be followed over Internet, as well as the minutes and orders of the day of the meetings.

In February of 2000 25-hour training courses were begun in the basic use of Internet. Priority in these courses was given to young people, women and older people.

Email: info@ayuntamiento jun.org
URL: http://www.ayuntamientojun.org
Telephone: 958 41 42 61

Some Recommendations and Lessons Learned

It is important to give priority in training plans to "transforming" groups. For example, ICT training in health and hygiene for girls and mothers has a demonstrated multiplying effect.

Priority must be given to the pedagogical aspects of contents, and the methodology applied with respect to the technical profundity: non-technological instructors, a mixed training model with both virtual and in-person training, personalised online tutoring…

It is important to launch massive awareness campaigns aimed at institutions, businesses and citizens on the importance of learning ICT, and to limit the cyber-rich/cyber-poor duality.

There is a proven difficulty in obtaining technological content and instructors capable of overcoming the jargon and differentiating the concepts from the tools, and limiting

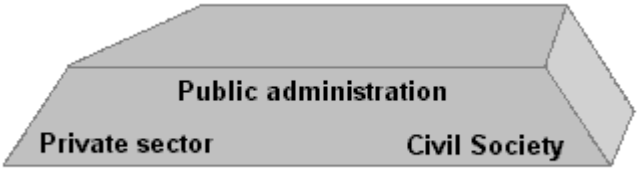
specialist knowledge. The ICT training market is determined by the offerings created by technicians, for technicians.

Technological learning alone does not resolve the problem of approximation to the information society. When computer learning is carried out in a context where there are other activities in which students can participate, results are better. More opportunities which are offered to find sense in the material being learned, produce higher levels of assimilation.

The necessary adaptation of the traditional structure of in-person training to permit the integration of ICT content and methodologies is not taking place. We must strengthen the utilisation of teaching tools which permit the transformation of the training sector/channel.

4.1.1. Training of Local Personnel

In order to accelerate the extension of knowledge it is useful to garner support from the most relevant actors in IS development: the administration, NGO's and businesses which lead projects.



*"[…] each development project should be complemented, insofar as possible, with ICT action, whether it be the **training of local personnel** and the deployment of some sort of IS access in the community, or some similar action.*

For example, at the same time as we're building a hospital, a school, a medical centre, a village well, etc., we must study the possibility of equipping that centre, or the municipality where it is going to be installed, with at least some element of IS access, along with the training of at least one person in the use of ICT, so that this person may, in turn, train others. If no cable access is available, we can seek alternatives such as radio, solar energy, etc. This will also permit future follow ups of the evolution of the community as well as the planning at a distance of further projects (electronic learning, for example.) (Measure included in the first phase for E-inclusion of the Spanish contribution to the summit)

Best Practices

Centre for Distance Education for Economic and Technological Development, CEDDET

CEDDET is the Centre for Distance Education for Economic and Technological Development, sponsored by the Spanish Ministry of Economy, the National University for Distance Education (UNED) and the World Bank, all integrated in GDLN.

"GDLN" is the acronym for "Global Development Learning Network," a World Bank program initiated in the year 2000, which has created a web of DLC's or Distance Learning Centres across the world, with the objective of aiding the transference of knowledge from developed countries to those in development, through the use of new technologies. CEDDET is Spain's DLC.

CEDDET's fundamental activity is the teaching of online courses, especially those directed to Latin American civil servants and experts in areas where needs are detected and where Spain can contribute quality knowledge which can contribute to economic development.

Their activities are tailored for middle and top management, whose professional activity is critical for the economic development of their respective countries, and who come from:

- National, regional or local public administrations
- Businesses and public organizations (post offices, water companies, mints, business promotion agencies, etc.)
- Small and medium-sized businesses, NGO's, etc.

Email: cursos.ceddet@fundacion.uned.es
URL: www.ceddet.com
Telephone: (34) 91 386 72 90

E-training Project, General Direction of Telecommunications and Modernization, Valencian Regional Government (Generalitat Valenciana)

With this project we have designed and developed a structure, platform and the necessary content to facilitate the self training of the public servants of the Valencian Regional Government, through the use of new ICT, relating the application of this learning to matters of their everyday functioning. This initiative proposes to modernise and improve public services.

Permanent training necessities, the optimum level of public services and the possibility of adapting the schedules and learning contents to each person made it necessary for the Generalitat to utilise the most modern, most agile instruments to achieve the necessary level of functioning of its public servants (managers and public employees.)

The project, which was developed in the Valencian Community's Second Modernization Plan, offers public employees courses from the Valencian Institute of Public Administration (IVAP) with a series of important advantages: the courses are multimedia and interactive, and developed with the latest programming and animation technologies. In the year 2000 the IVAP courses centred especially on the diffusion of knowledge, the use of administrative language and new technologies. Among them are "Personnel Management ", "Introduction to Internet", "Training of Trainers " or "Access to Legislative Data Bases."

Email: monfort_jos@gva.es
URL: eformacion.gva.es

Some Recommendations and Lessons Learned

Public employees, in a great part of their work in attending citizens, have an exemplary role in the use and diffusion of ICT. The launching of training plans for them has a multiplying effect, while at the same time advancing the cause of institutional consolidation.

A key aspect is knowing which are priority necessities for citizens and institutions, or what amounts to the same thing, what necessities are to receive the scarce resources

available? One of these priorities is usually that of having an education which permits one to choose among the various available lifestyle possibilities.

The leadership role of the public administrations in the construction of the information society, with public employees as agents of change, is more effective to the extent that it can count on private-sector collaboration.

Administrations do not tend to exercise clear and decided leadership. The strategic plans of the different public administrations for the construction of the information society should be the driving forces of a whole set of activities: awareness and training programs, improvements in services, etc.

In order to overcome the limitation of the different levels of technological formation of civil servants we must adjust the interfaces to the capabilities of the users. The use of a complicated interface, or too-powerful, or too-complicated technological solutions will be detrimental to the effective use of the technologies.

The training of university graduates or persons with a high academic level, high incomes and a stimulating family and social environment, is not the same as that of persons with limited resources, lacking confidence in his or her learning capability and in a neighbourhood with serious deficiencies. Often the digital divide is an expression of an existing social gap.

4.1.3. Promotion of Own Content – Cultural Identity

The collectives which participate actively in the construction of the information society, participate not only as users, but must also generate their own content and net communities in order to foment and guarantee the solutions to their necessities.

"[…]To encourage local communities to ***develop their own content and services and to thus preserve and strengthen their natural and cultural patrimony..."*** *(Measure included in the second phase for E-inclusion of the Spanish contribution to the summit)*

Best Practices

Andalusia in E-equality, Junta de Andalucía, Direct Foundation, Diputación de Córdoba, Seville XXI Century, University of Seville, Official College of Psychologists of Western Andalusia, Seville Businesswomen's Association, Cadiz Businesswomen's Association, Liderared and Cibersur.

The "Andalusia in E-equality" project is set in the framework of the European Union's EQUAL initiative, which was created to encourage processes of change through four development factors (Observatory of the Socio-Laboral Reality of Women, Teleservices and E-equality Web Portal, Strengthening and Succession in the Small Family Business and Communication for Change.) *(More information after the paper, "Knowledge Society with Knowledge of Women" of section "3.7. E-inclusion.")*

Email: info@e-igualdad.org
URL: www.e-igualdad.org
Telephone: 913104233

Portal RedMayores.net/org/es, Peace Messengers

This portal is the virtual meeting place for all Elderly Internauts for Solidarity. It's aim from the outset has been to become the portal where older people can find everything they need: useful and interesting information, advice in health, legal, and technological fields of; value formation and channels of participation through forums, chats, message boards, publication of poetry, short stories, etc.

Through the Portal RedMayores and the services for older people offered there, the new technologies are promoted as a means of relating with one another. The use of these technologies generates in older people both a demand for services and a higher cultural level.

The older person is better informed, not only in questions of the Portal RedMayores, but in everything which occurs in the Internet community, thanks to the facility of access which he or she obtains with the services of the portal. Most

importantly, all content, advice and help offered by the portal is provided by specialized expert older people themselves. Who better? *(More information after the paper, "Older People and New Technologies" in section "3.7. E-inclusión")*

Email: redmayores@redmayores.net
URL: www.redmayores.net

Datamation

The corporative culture of Datamation consists of enabling the weakest elements of Indian society through ICT, including women and persons with disabilities.

The company has involved itself strongly in the implementation of ICT projects in collaboration with organizations dedicated to volunteer work, primary education programs and the health sector.

URL: http://www.datamationindia.com/gkdindex1.html

Solidarte, with the sponsorship of the Universidad Pontifica Comillas and the collaboration of Madri+d

Solidarte is a store dedicated to the distribution and online sale of Fair Commerce products (furniture, decoration and housewares, art and culture, complements, clothing and fashion, leisure and free time.....) which are easily acquired through Internet and transported securely to the delivery point.

However, Solidarte is much more than a store. Solidarte has created a model of a socially responsible company, whose objective is to facilitate access to markets and improve the conditions of life, both for the less-favoured communities of the "South" and excluded groups in developed countries, through the promotion and sale of their products purchased at fair prices. These products are manufactured, transported and offered to the market in a responsible way and with full information regarding their origins, conditions, commercial margins and the overall impact of this activity.

In this way, through Internet, buyers are offered open and transparent information regarding the origins of the products, especially about the contribution of responsible shopping to sustainable development.

Solidarte have established in their statutes that their principal aim is to contribute to the improvement of the conditions of life of excluded communities through fair and just commercial relations. It is a socially responsible company which exploits and promotes its alternative business model, both efficient and competitive and with high growth potential through investment and savings, channelling the flow of funds into micro-companies and other productive organizations in the form of micro-loans.

Solidarte receives the direct sponsorship of the Universidad Pontificia Comillas de Madrid, which includes the participation of the board of directors of the company. By the same token, the business project has benefited from the advisory services and backing of the Virtual Technological Business Nursery of the Community of Madrid.

Email: solidarte1@solidarte.net

URL: www.solidarte.net

Telephone: 91 540 61 53

EMA-RTV

EMA-RTV works in communication-for-development projects in Bolivia, El Salvador, Guatemala and Argentina. In these countries local counterparts participate in training for community radio. The creation of these community radio initiatives is motivated and accompanied by assistance in the corresponding legislative processes in these countries. In 2001 solidarity activity of the association mobilised some 500.000 euros, obtained from Andalusian cooperation funds.

(More information after the paper, "The EMA RTV Project, a Challenge Within the Information and Knowledge Society" of the section 3.8.Transformation of Processes)

Email: administracion@emartv.com
URL: www.emartv.com
Telephone: 954 560 660 / 954 564 713

Some Recommendations and Practical Lessons

We find ourselves in an ideal moment for grass-roots stimulation and proposals. The voice of women, cultural minorities, less-favoured collectives and civil movements all should be heard through new channels. This is a source of wealth, of participation, of all of these people's own content in Internet and of the strengthening of fragile networks. We must put the ICT's at the service of social groups and their activities.

The information society lives by and for knowledge. We must seek this knowledge in people, in ourselves, the key to our own content, that of virtual animators… Older people, for example, can be a valuable quarry of content if proper plans are laid for exploiting their talents.

Globalisation with a human face, not just propelled by market forces, is working towards "another world is possible." This objective requires the richness of local content.

The cultural homogenisation which Internet and its dominant content and applications providers bring with them, tend to eliminate the richness of cultural miscegenation. Local content should be a political, business and social priority.

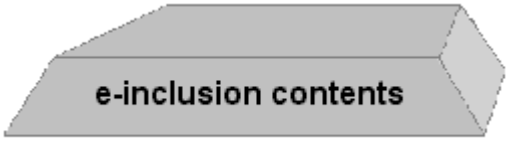
We cannot establish a priori the utilities of ICT tools. Each collective, with its own rhythms, customs and necessities, will find a different utility for these tools if they are placed at its disposal. Content and service development projects should leave resources and time for local creativity, and not always be imposed from above.

We are seeing a deficient application of preferential attention to gender in places where technological decisions are made and information society policies are created. And we are noting a deficient representation of women in institutions and companies of the sector. These questions are not advancing at the rhythm necessary to guarantee an "integrated construction" of the information society.

4.1.4 Catalogues of Best Practices by Necessity Profiles

The design and execution of projects within the framework of the information society should be adapted to each collective and territory, taking advantage of applicable elements from other, similar projects: content, methodology, models, evaluations, etc.

The ICT's permit the sharing and distribution of material and knowledge in conditions which were unimaginable just a few years ago.



Best Practices

EHAS (Hispano-American Health Link), Engineers Without Frontiers

Hispano-American Health Link (EHAS) offers health workers in Hispanoamérica a low-cost telecommunications network and a set of telemedicine services adapted to rural settings.

With the EHAS system we can equip posts and rural health centres with radiophonic communication and email, even in areas which lack telephones and electric current. We also offer modules for distance training of health personnel, the possibility to consult specialists at a distance, help in accessing health-related documentation and assistance in developing systems for sending information. After a first pilot experience the program is being implemented in other regions with similar necessities. *(More information after the paper, "Economical Rapid-Deployment Basic Telephony" in section 3.3. The Role of Civil Society)*

Email: **informes@ehas.org**
URL: **www.ehas.org**
Telephone: + (34) 91 550 04 35, ext. 34

Program of Reunification of Children with Their Parents: Use of the Information Revolution to Find Lost Children (IPKO Institute)

In Pristina, Kosovo, the International Rescue Committee has created a common satellite network with Internet capability (www.ipko.org). All of the organisms of the United Nations, the Organization for Security and Cooperation in Europe, various national missions and the majority of NGO's in the area are connected to Internet 24 hours a day through this network.

Since the cost of this technology is so low, the project can also provide free Internet connections for the university, the hospitals, the libraries, the schools, the news media and the local NGO's. In this way, international organizations not only establish solid communications connections while saving money, but they also contribute to supporting Kosovo's civil society and to constructing a long-term

infrastructure for Internet services there. The project was recently turned over to a local independent NGO and is now completely autonomous. *(More information after the paper, "Information Society at the Service of People" in section 3.2. Necessities of Citizens)*

Email: info@ipkoinstitute.org
URL: www.ipko.org
Telephone: +381 38 244 264

Hospital Classrooms, Spanish Ministry of Education, Culture and Sports

The Tele-Education Program in Hospital Classrooms arose during the 1997/98 school year as an institutional initiative of the Ministry of Education, Culture and Sports, with the objective of contributing the technical, training and organisational tools necessary to create a learning, communication and support space for the students of the hospital classrooms in their territories. In this way they tried to overcome barriers and alleviate situations of isolation which these students were experiencing.

It is an introductory program of new technologies in the field of educational compensation. Directed to the hospitalised school population, it is an explicit recognition of the rights of students in disadvantageous circumstances due to long hospitalisation, and permits them to continue their studies in the most normal manner possible. The program converts this disadvantage into an opportunity to develop skills in the use of technological tools. It permits students in hospital the possibility of relating with their classmates from normal classrooms. It also offers them a channel through which they can keep up with their studies and progress in the use of the new technologies.

This program was initiated in 32 classrooms re under the auspices of the Spanish Ministry of Education, Culture and Sport, and included the participation of some 60 instructors. The number of students who participated in the pilot program varied from time to time and hospital to hospital, as the program was open to all hospitalised students whose medical situation permitted it.

The Tele-education in Hospital Classrooms took advantage of the use of computers and telematic systems in a program of helping hospitalised children. The support was not only academic, but emotional and social, through self expression and communication with their classmates. At the same time it converted a situation of academic disadvantage, immobility and time on their hands, into an opportunity to develop technological knowledge and skills. Not only did the children learn, but the instructors were also immersed intensely in a telematic program of online messaging and debates.

It was a three-part program made up of communications infrastructure, computer infrastructure and training in the use of information and communications technologies.

Although in the year 2000 Spain's educational competencies were transferred to the autonomous communities, the spaces created for this program, such as email, web site and news group, were maintained and are still functioning.

(Information provided by Francisco García García, Juan José Blanco Villalobos, Beatriz Sánchez Esteban, of the National Center for Educative Information and Communication)

URKL: http://www.cnice.mecd.es/proyectos/aulashosp/

SICLA Project, Telefónica Foundation, Telefónica I+D, University of Oviedo, Aspace Federation, Aspace Cataluña, Avapace.

The SICLA project (Communications System for Augmentative Languages, Sistema de Comunicación para Lenguajes Aumentativos) carried out by the Telefónica Foundation, is designed to help people with cerebral paralysis to participate in society, providing them with a communicator which can be adapted to their necessities, in both in-person contact and via telephone or Internet. The only tools needed are a PC running under Windows and a modem.

The project was presented in 2001 and today it is being tested with real users in an effort to improve the interface.

INFOREDAR Project, AMIRA SYSTEMS, AFAPIS and AUPACE

"Inforedar services" is a special employment center created by AMIRA SISTEMAS, AFAPIS y AUPACE, and dedicated to information management on Internet and oriented to the social application of new technologies.

Its philosophy consists of:

- Applying working methods in flexible, collaborative networks based on new technologies in order to facilitate the access of disabled people to employment
- Involving disabled people in the development of services and products which satisfy the needs of the disabled
- Contributing to the recognition of disabled people as specialists in the ways in which new technologies can improve their own lives

(More information after the paper, ""New Technologies and Labor Relations" in section 3.7. E-inclusion)

Email: info@amira.es
URL: www.redar.net/inforedar/
Telephone: 902 222 386

The BIT Project, Auna Foundation, Madrid Down Syndrome Foundation and the Carlos III University of Madrid.

The BIT project is an R&D project with an educational and technological character. Its principal objective is to bring the use of the new information and communications technologies to people with Down's Syndrome and/or mental retardation, in order to favour their integration into educational, social and work settings.

The BIT project arises from the necessity to overcome the access barriers which ICT present to disabled people and to assure that the benefits of the information society are extended to all citizens. In the case of people with intellectual disabilities mere technical help is not enough to overcome these difficulties. For that reason, at the same time that elements of the user interface are being adapted, it is essential to employ an adequate educational methodology to facilitate the learning of the use of computer programs.

Through the learning of computer concepts, the BIT Project reinforces the cognitive abilities needed by students with special educational needs (n.e.e.) At the same time, and through the use of computer technology, students receive training in other important subjects such as health education, traffic norms, consumer protection and the environment.

Email: proyectobit@auna.es
URL: www.proyectobit.com

Some Recommendations and Practical Lessons

Development cooperation projects involving ICT should generate "exemplary and transferable" results. That is to say, they must be incorporated into the daily reality of participants and serve as a model in technological aspects, as well as in terms of content and social contributions. They must also cover eventual cases of poverty or emergencies.

Existing communities which define the different profiles of necessity are the best motor for change, development of solutions, content and the sustainability of the projects.

The traditional attention to social necessities can be improved and brought down in price by the adequate use of ICT in processes of personalization, follow up and capillarization of services.

The start-up of pilot projects is useless if, once concluded the pilot experience, the technological and content development, the usage periods and the evaluations, nobody follows up the results with concrete programs of maintenance, extension or transfer.

We must avoid the lack of accessibility of ICT projects. The establishment from the outset of adequate standards adapted to the different disabilities enormously facilitates this objective. For this reason it is necessary to provide support resources to developers and practitioners.

We cannot guarantee the useful life of a project if we don't make an ongoing effort to make its benefits visible in everyday usage.

4.1.5. Cybervolunteers

One of the processes which can benefit most from the new channels of communication is that of volunteer services.

*"**cybervolunteer programs**: each country could twin itself with others in order to offer or receive cybervolunteer services, such as online help in different fields from online volunteers for ICT training programs. This strategy can be studied for both bilateral and multilateral situations. The UN agency, UN Volunteers, could offer each country a catalogue of possible cybervolunteer programs. By the year 2005, 50% of countries should have cybervolunteer programs in place, whether for online support or for ICT training.." (Measure included in the first phase for E-inclusion of the Spanish contribution to the summit)*

Best Practices

Online Volunteer Programs, Netaid.org.

A German volunteer translates documents for an organization working with young people in Africa.

A person in Nigeria writes articles and case studies for an organization in the United States which is working on the problem of eradicating poverty in West Africa.

A woman from the United Kingdom, concerned about infant poverty creates a website for an organization in Sri Lanka.

These are just three examples of the thousands of NetAid volunteers who offer their time and experience to help organizations which provide help to developing countries. These volunteers are able to help without leaving their homes. They work at night, on weekends, at mealtimes or at any available time. They collaborate from work or home or anyplace else where they have access to a computer and an Internet connection.

Since the beginning of the year 2000 NetAid, with the support of the United Nations Volunteer Program, has gathered together online volunteers and development organizations and created an immense database of opportunities to do volunteer work and help out in all parts of the world.

Email: **volunteers@netaid.org**
URL: **www.netaid.org**

Hacesfalta.org, Chandra Foundation with the Sponsorship of the VIPS Group

Hacesfalta.org is an Internet space designed to facilitate and foment volunteer work both by connecting potential volunteers with non-profit organizations which need help and through a media campaign of awareness and participation.

In order to register their volunteer opportunities, organizations must only demonstrate their non-profit status, that they are legally constituted, and that they develop programs in the framework of the activities of general interest enumerated in Article 4 of the Volunteer Programs Law. *(More information after the paper, "Towards a New Collaboration Space Among Business, the Administration and Social Entities" in section 3.3. The Role of Civil Society)*

Email: hacesfalta@fchandra.com
URL: www.hacesfalta.org
Telephone: (34) 91 345 12 30.

UNITeS, United Nations Volunteer Program

The Information Technologies service of the United Nations (UNITeS) is a global volunteer initiative, directed by the United Nations volunteer program, which permits volunteers from all countries to offer their abilities and time in order to extend the opportunities of the digital revolution to developing countries. Its creation was announced by the Secretary General of the United Nations, Kofi Annan, in his Millennium Report.

The UNITeS volunteers work directly with people and institutions in developing countries to strengthen their abilities in the application of ICT. It is a wider concept than mere training; it is the bolstering of these people's capacities to achieve necessary goals. To show accountants how to use a spread sheet is one thing (training), but to work with them to introduce spreadsheet techniques into their daily work is quite another. It requires more time and more knowledge transfer.

UNITeS volunteers must have experience with computers and Internet, at least at the user level, besides other specific abilities according to the projects at hand. They also require a high level of ICT and language ability, as well as a sense of solidarity and service, and a commitment to share their knowledge and experience with others.

Email: info@unites.org
URL: www.unites.org

Corporative Volunteer Program, Telefónica Foundation

The Telefónica Group's Corporate Volunteer Program was created to promote volunteer work among the employees of the group. The program develops and facilitates the necessary resources for the program to be both effective and permanent. Thus, the corporate volunteer program is aimed at organising and consolidating the development of a network of solidarity, constituted voluntarily by people who work in the Telefónica group of companies, with the objective of

proactively carrying out programs of social interest, in keeping with the goals of the Telefónica Social Action program.

There are three possible forms in which the employees of the group can collaborate:

"Formal" collaboration with institutional NGO's. In this case the Telefónica Foundation is the vehicle for establishing contact between the organization and the employee, via information in both directions.

A second type is the *assistance for training and development of groups made up of employees* who develop, by themselves, social programs which are compatible with the framework laid out in the statutes of the Telefónica Foundation. Without having to be integrated in a given NGO, it is possible for a group of workers to develop their own program of solidarity, locally or at provincial level. The Telefónica Foundation provides these groups with the necessary materials and supports them with training, communication, etc.

The other type of volunteer program is that which arises as a result of *collective catastrophes* (earthquakes, hurricanes, tidal waves, etc.) or due to problems of a more personal or local type (fund raising for medical treatment in another country, or to resolve urgent problems for people who lack economic means, donations for material or medical purposes, etc.) These activities are coordinated by the Telefónica Foundation, which analyzes the requests and channels assistance with adequate guarantees of effectiveness.

The Telefónica Group, made up of more than 150,000 employees around the world, is an interconnected human network which potentially represents a collective with a tremendous capacity for social cooperation. On the other hand, this initiative is similar to those set up by other multinationals of the sector, such as ATT, BT, Deustche Telekon, Sprint Corporation, Telecom Italia, etc.

Email: voluntariadocorporativo@risolidaria.org
URL: www.risolidaria.org/canales/canal_corporativo/

Volunteer Program of the Autonomous University of Madrid

Through the volunteer program area of the Office of Solidarity Action and Cooperation, the Autonomous University of Madrid (UAM) initiated in the year 2001 a collaboration program with the United Nations Service of Technological Information (UNITeS), with the object of reducing the digital divide between countries. This program has furthermore permitted the creation of a unique working network among the solidarity programs of Spanish universities.

The origin of this program lies in the visit which the directors of the solidarity movement of the UAM made to the headquarters of the United Nations Volunteer Program (VNU) in Bonn (Germany.) This visit was in the context of the meetings programmed by the office to learn from the working experiences which other institutions were carrying out in volunteer programs, thus to be able to define common areas of interest and to establish joint working networks.

(More information in the paper, "The University and the Information Society: A Reflection for a Different Approach" of section 3.8. Transformation of Processes)

Email: iniciativa.solidaria@uam.es
URL: http://www.uam.es/otros/uamsolidaria/
Telephone: 91 396 76 02

Some Recommendations and Practical Lessons

Bridges must be built between companies and NGO's for the rendering of basic services. Socially compromised business strategies, corporate volunteer programs and the long-term role of the NGO's as detectors of necessities, open the door to effective collaboration schemes.

People with high knowledge profiles but with little available time find in cybervolunteer programs flexible opportunities to meet their altruistic solidarity needs. All projects have a place for this type of volunteer.

More and more people have access to the information which they need to better their quality of life, and their options through the planetary electronic nervous system. In order to multiply the usefulness of this information as a motor of human development we must facilitate communication and collaboration among people and organizations all over the world.

Cybervolunteers should not participate only in online cooperation activities. They need the sense of pertaining to a group. For that they must associate faces with the projects, the results, the teams, the NGO's… utilising occasional face-to-face meetings, with online motivational techniques, providing permanent feedback, etc.

The tasks assigned to cybervolunteers can be a bottleneck for projects if they are not adequately planned in terms of resources and delivery times.

A cybervolunteer doesn't only have to have experience or skills to share through the network. In order to be effective he or she also has to have a minimum capacity for working in a network.

4.1.6. ICT Support for NGO's

Another of the organisational schemes which can multiply efficiency is the coordination among members of a given NGO, and among different NGO's.

"To facilitate ICT support centres for NGO's, which reinforces their management capacity in each country, and to assure that the NGO's can count on ICT resources. The adequate use of ICT tools has a favourable effect in aspects such as the organization and functioning of the organizations, the coordination of their work in a network, the deployment of services or the management of the volunteer program and other resources." (Measure included in the second phase for E -inclusion of the Spanish contribution to the summit.)

Best Practices

Risolidaria, Telefonica Foundation

The Telefónica Foundation has developed the International Solidarity Network (Risolidaria) for NGO's, providing them with instruments to facilitate their effectiveness and intercommunication. Risolidaria is a telematic support platform for the activities developed by non-profit organizations in countries where they have most presence.

Risolidaria pursues the following objectives:

- To disseminate the activities of organizations (projects, campaigns, calls for volunteers, mobilisations, employment brokerages...)
- To facilitate relations between NGO's and the collectives which collaborate with them: volunteers, cooperation personnel, paid employees in the headquarters, communications media, companies, sympathisers, sponsors, advisors… By means of the use of telematic tools we can improve communication, coordination and the participation of everyone involved
- To improve working conditions among the NGO's of different countries through a well-updated and dynamic Internet portal which permits the sharing of ideas, proposals, human resources and materials
- To eliminate expenses through the contribution of advanced telematic solutions for use by the members of the community
- To strengthen debate and reflection among the collective of non-profit organizations through the promotion of chats and forums proposed by the organizations themselves

In this way NGO's can publicise their activities (projects, campaigns, mobilisations and courses) as well as improving the debate and the coordination among themselves. Through the use of new information technologies a virtual community of solidarity can be configured which can serve as a reference in relations, interchanges, training and information among different NGO's and their members.

This would be a concrete program of solidarity of local or provincial dimensions. The Telefónica Foundation provides these groups with the necessary means and supports them with training activities, communications, etc.

Email: **risespana@risolidaria.org**
URL: **www.risolidaria.org**

SolucionesONG.org, Chandra Foundation, Luis Vives Foundation

Soluciones ONG is a web portal created by the Chandra and Luis Vives Foundations with which both foundations try to extend their work to professionals of the third sector (both remunerated and volunteer.) With this portal they also try to attract experts to volunteer programs, as well as offering a medium to the NGO's which work online. *(More information after the paper, "Towards a New Space for Collaboration Among Businesses, the Administration and Social Organizations" in section 3.3. The Role of Civil Society)*

Email: **solucionesong@solucionesong.org**
URL: **www.solucionesong.org**
Telephone: (34) 91 345 46 12

Communications Units for Emergencies, Telefónica Foundation

In order to assure a permanent means of communication for Spanish cooperation workers outside of Spain, the Telefónica Foundation provides these organizations with emergency communications kits. With this unit they also facilitate the training and technical support necessary to guarantee the availability and correct functioning of their communications. The unit has been maintained thanks to an agreement with the NGO Coordinator for development and is made up of 10 MoviStar Global terminals, which guarantee communications in any emergency situation and uninterrupted service from anywhere in the world. MoviStar Global is an advanced satellite communications service which, through Inmarsat-3, offers worldwide coverage via four geostationary satellites, permitting communication from anywhere on the planet.

URL: **www.fundacion.Telefónica.com/proyectos/cooperacion.jsp**

The Initiative of the Open University of Catalonia: The Campus for Peace

The Campus for Peace, the cooperation and solidarity program of the Open University of Catalonia, puts new information and communications technologies at the service of international cooperation programs and the training processes. These are conceived as means to an end, value added, not an end in themselves.

This spirit manifests itself in the support of projects to which it brings the value added of virtualisation, self management through virtual communities (based on the Virtual Campus of the UOC) and/or the design and programming of online courses based on the knowledge which the UOC has in these specialities.

Email: **campuspeace@campusforpeace.org**
URL: **www.campusforpeace.org**

Some Recommendations and Practical Lessons

The most common technologies, such as radio, can play an important role in the advancement of ONG's functions as purveyors of awareness-information-training for the information society.

The location of shared technological resource centres, in an associative context, constitutes a guarantee always to count on a community of persons, an understanding of necessities and a framework of sustainability.

The role of these cooperation animators is essential. It is they who establish direct contact with people, and their capacity for relations, dialogue, motivation and accompaniment is much more relevant than their computer knowledge.

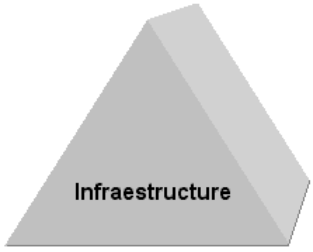
NGO's have problems providing their own content in Internet, and support in basic technologies. We must consider solutions for technology integration and training to permit them to generate their own content.

The representatives of civil society are also affected by the digital divide. They are increasingly adopting ICT solutions, but levels of use are still very low.

In many NGO's and associations global projects which incorporate ICT as a basic element are lacking. There is a "poor conception" of ICT in many organizations.

4.1.7. Public Access Points

The best training efforts, or content preparation, or adaptation of processes, are meaningless if an ideal access infrastructure is not guaranteed to citizens.



"By the year 2020, at least one public and social centre in each town (between 2,000 and 10,000 inhabitants) will be equipped with a free public access to Internet and a person with basic training in. By the year 2005 it is hoped that in each country the program would reach 20% of the towns in question. These centres could be used as hubs for imparting basic training in ICT. They could become catalysts, making possible, for example, the development of local content by giving local users the necessary wherewithal and training.

By "public centre" we mean a town hall, a hospital, a school, a natural park, a post office, a library (or all of the above), a social centre (of youth, adults, religious, sporting, ONG's...) or whatever other centre with a vocation for social service to the whole community. The community will be informed of the program by the traditional media: written press, radio, television, etc. As a second phase, we can study the creation in each community of a sustainable centre for these ends". *(Measure included in the first phase for E-inclusion of the Spanish contribution to the summit)*

Best Practices

Connect Network (Red Conecta), Esplai Foundation

Connect Network is a form of providing computer training and familiarity with ICT through a close personalised environment. How does it work in practice? The Esplai Foundation establishes an agreement with a local association, which functions in a given neighbourhood or town, to install a computer classroom in that association and work together. The Esplai Foundation contributes the equipment and a specific methodology, along with the necessary learning materials and the training of a person to run the classroom, who is contracted for one year, and offers assistance in coordination, follow up and evaluation. *(More information after the paper, "Digital Literacy Programs as Factors of Social Inclusion" of section "3.2. Necessities of Citizens")*

Email: **fundacion@esplai.org**
URL: **www.redconecta.net; www.fundacionesplai.org**
Telephone: 902 190 611

Jump on the Network (Salta @ la Red), Tomillo Foundation

The Jump on the Network program has been created for the orientation and computer literacy of young people, housewives, civic associations and social entities in the southern zone of Madrid.

The Tomillo Centres of Youth Information are equipped with computers available for users who request them. The usage time is one hour and they are free. All the computers are equipped to use the programs of Microsoft Office: Word, Excel, Access or Power Point, access to Internet and the use of the Webmail email program. Users are also given advice and orientation in Internet navigation.

Email: fundacion@tomillo.es
URL: http://www.tomillo.org/cij/
Telephone: 91 561 16 04

Bip Bip Foundation

The Bip Bip Foundation's program begins with the collection of computers discarded by companies. These computers, Pentium 100 or superior, are revamped, tuned up, installed with latest generation legal software donated by Microsoft, and prepared for Internet access. In this way both environmental and social objectives are met.

They are then installed, for free, in newly-created computer rooms in homes, associations and in residences which sign up for the program. The mission of teaching these new users the use of Internet and the new technologies falls to volunteers who are previously given training. The Bip Bip Foundation carries out its work all over Spain.

Bip Bip centres are staffed by training personnel with Internet connections, from which people who lack economic resources can receive training for their social and job reinsertion, and join the technological era.

Through agreements and detailed sociological studies, the Bip-Bip Foundation determines which centres and which users are best able to absorb and take advantage of a program of internaut training.

Email: info@fundacionbip-bip.org
URL: www.fundacionbip-bip.org
Telephone: 902 903 008 / 91 661 82 12

Iberoamerican Educative Televisión, ATEI

The Iberoamerican Educative Televisión Program was approved in 1992, as an instrument for cooperation and encouragement for the production and diffusion of educational materials, by the Iberoamerican Summit of Chiefs of State and Government celebrated in Madrid, Spain. Created by the Spanish government, it is financed mainly by the Spanish Ministry of Education and Culture with economic contributions from Argentina, Colombia, Cuba, Chile, Honduras, Mexico, Panama y Venezuela, countries which will soon be joined by the rest of Iberoamerican states.

Now, through the interaction and participation of its associated organisms, this program has the mission of contributing to the development of education in Iberoamerican countries through the use of television and other media derived from new communications and information technologies.

In that same year of 1992, and with the comission to manage this Iberoamerican Cooperation Program, the Iberoamerican Association of Educative Television was formed, with headquarters in Madrid. From there, under the direction of the Secretary General the programming, production and signal transmission via satellite are carried out. It is also there where relations and agreements with partners and other institutions are administered.

Email: secretaria@ateiamerica.com
URL: www.atei.es/
Telephone: (+34) 91 522 70 99

Simputer, the Cheap, Available Computer, Indian Institute of Science and Encore Software Ltd.

The Indian Institute of Science and Encore Software Ltd. developed the Simputer, or Simple Computer, considered a tool of easy use and low cost, which they intend to promote in developing countries. It is a low-cost mass-distribution device which is prepared to cover the linguistic needs of various regions and is easy to use, even for people with a low academic level.

The Simputer is not a PC, rather a hand-held device (like PDA's or Pocket PC's), but more powerful, with a greater monitor size (320x240 pixels) and memory capacity (32 Mb RAM), which operates under the GNU/LINUX operating system. The device has no keyboard; information is introduced through an integrated system via the monitor, the letters of which are activated by contact, or utilising the "tap-a-tap" method, similar to graffiti. Although a keyboard can be adapted, it is not recommended for the massive input of data.

The Simputer functions with sound and visual icons, is able to store MP3 files, navigate in Internet and send email. It also translates websites in English into different Indian languages and reads content to illiterate users via a low-energy Intel processor. The navigator works in a language specially created for the Simputer: IML (Information Markup Languaje), which is an XML application.

It is calculated that, with mass production, the Simputer could cost less than $200. Though this sum might seem excessive for a single person, it is not necessarily so for a community or a cooperative. The device permits the use of a SmartCard, a method which permits various users to share the device, which further diminishes the cost.

In India there is already an educational program called Bastar, which is a pilot program in which some 2,000 students are scheduled to participate. These students can learn by using their SmartCard. The devices will be distributed in 95 Indian villages where there are no telephone lines, where they will receive educational information via satellite.

For the moment, the content includes information regarding health, but plans are in motion to include a program called "e-governance," which will have an interactive

space for complaints or requests, another designed to combat poverty and a third dedicated to micro-loans, which would be distributed in various Indian cities.

Email: simputer@csa.iisc.ernet.in.
URL: www.simputer.org/

Zamora Hot City, Wireless and Satellite Networks (Afitel)

The Afitel project of wireless access to Internet installed in Zamora by Wireless and Satellite Networks S.A has won the Computer World Honors prize in the United States as the best business application on Internet. This project has converted Zamora into a pioneer city at the worldwide level in the urban application of wireless Internet, with the particularity of being a private enterprise project.

Until now there were only "hot spots"[49] in places like airports and commercial centres, where subscribers to Internet service could access the network by wireless means. Afitel has extended this concept to a whole city. They chose Zamora because it is a small city of just 65,000 inhabitants, but whose numerous buildings of millenary stone presented special difficulties, as they were obstacles for the transmission of low-energy waves utilised by the network.

With the cooperation of the Zamora town hall, Afitel installed 300 10-centimeter-long antennas all over the city. This permits 1,200 subscribers to navigate the network from anyplace in the city.

Email: info@afitel.com
URL: www.afitel.com
Telephone: 914 119 573

Some Recommendations and Practical Lessons

There is a multimedia technology with a very high level of penetration and public control in most case: television. The motor for awareness campaigns and the creation of a network of access points, without technological barriers, very well might be the television.

Access centres are activators of local societies and economies. Capital investment in the information sector is much below that of other sectors. Public access centres open the door for small businesses to experiment with technological resources, access to information, specialized advisory services and meeting spaces. Furthermore, the centres are important elements for winning over the communities in which they are installed and strongly encourage the creation of local content.

[49] "Hotspots," are wireless Internet connection points.

The regulatory models indicate the necessity for community technology and service centres as bridges between the infrastructure which the market guarantees and the gaps in universal service in places where it is legislated, for broadband data service. The public coverage of the percentages of population which are commercially inviable in the context of the market economy seem absolutely necessary.

The problem of access cannot be solved by providing broadband services, when 50% of humanity has never made a telephone call in their lives, and a third of humanity lacks electricity. The providing of universal technological services is a priority which may not have a solution in the context of the market economy.

The installation of technological infrastructure (telecentres, access points …) without strategic development plans, the implication of local actors, the development of services for the community and the productive fabric, does not work. This question is further complicated by the fact that ongoing technological obsolescence will make investments unsustainable very shortly. It is necessary to establish development strategies, extending deployment according to available resources, demand and community interest.

The lack of a stable regulatory framework which inspires confidence in the companies of the sector is a hindrance to the necessary investments.

4.2. E-learning

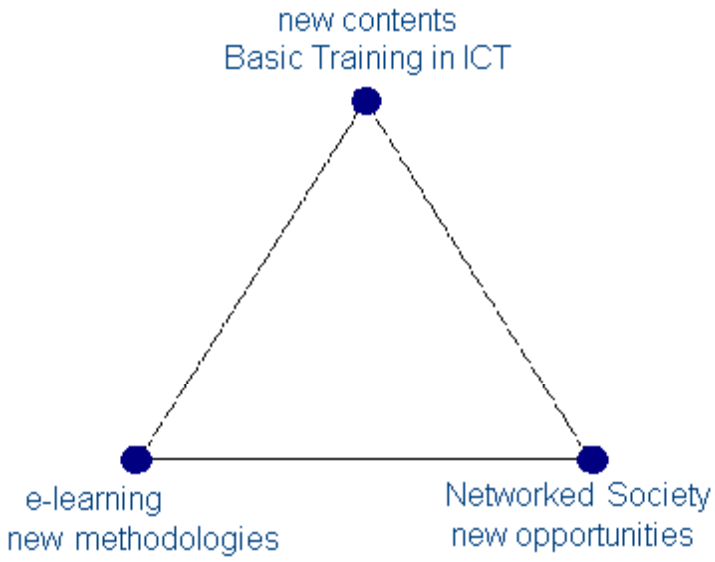
The Vision of E -training as Support for E-inclusion

The best practices and lessons learned proposed for E-learning or E-training are reflected in the following illustration and in the spirit of the Spanish contribution to the summit in this quotation[50]:

"We must distinguish at least two concepts when referring to education in the information society:

- ***basic ICT training***
- ***electronic learning***

Basic training in information and communications technologies is what permits the learning of skills which are basic to the information society. It opens the possibility of accessing one of the most important services which the IS offers, electronic learning and, by extension, all the rest of the services: electronic administration, e-commerce, etc. This training also includes elementary security content.



E-learning arises as a counterpoint to traditional teaching methods. It can complement and reinforce them, as well as opening new learning channels, since this new learning concept makes use of the ICT in greater or lesser degree, including connection to Internet or other communications networks.

However, sometimes the two concepts are confused, because one is necessary for the other. That is to say, if you don't know how to use the tools or the access platforms, you will hardly be able to access electronic learning. For this reason it is not enough to have a computer connected to Internet for a centre to affirm that it imparts electronic learning services. For this

[50] The text in italics is extracted from the Spanish contribution to the World Information Society Summit with reference to E-learning.

it is necessary to have students and instructors with previous training, as well as educational material and specialized learning software.

However, both questions (availability of equipment and of training in its use) tend to be lumped into the same category of electronic learning. Even though we know they're not synonymous, we will continue in this line of work, mixing both concepts when referring to school and work environments.

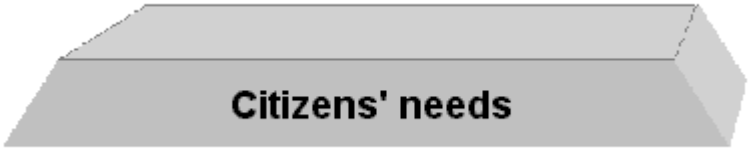
Regarding the question of ***basic training*** *in ICT for collectives with high risk of exclusion, this has been discussed in the section on E-inclusion. There are collectives which we cannot reach neither through schools nor workplaces, because these people have passed these stages or were never included in them. Therefore, the approximation to the problem of these sectors of society is included within the chapter on E–inclusion. As we mentioned before, E-inclusion and electronic learning both form part of a structure in which the two elements interact and are mutually dependent.*

In general terms we can all be participants in electronic learning at some times in our lives if the concept of lifelong learning takes root. There are two places where it is easiest to access this learning experience for the first time: in ***schools and other learning institutions****, and in the* ***workplace****.*

When it comes to narrowing the digital divide, there is a second large step in the innovation process in the networked society. We can foment both the ***transfer of knowledge*** *and the creation of* ***communities of experts.*** *These actions would be double-action instruments in the field of electronic learning: they would permit geographically-dispersed professionals to share their knowledge and skills, as well as thus giving beginners access to quality information."*

3. 4.2.1. Curricula Change

The basic necessity which we must cover in order for citizens to access the necessary knowledge about and through the ICT's consists in adapting the educational system both in its objectives and it its content and the methodologies used to achieve them.



*"[..] to include a **module of ICT formation** in the cycle of obligatory primary and secondary education, as well as in superior levels." (Measure included in the second phase, school setting, for E-learning of the Spanish contribution to the summit.)*

Best Practices

Plan to Integrate ICT in School Curricula, CNICE.

In the case of Spain, the launching of the first strategic plan, in 1985, to introduce ICT in the curriculum was experimental in nature, and later evaluation served as the basis for two posterior phases, first to enlarge the plan, then to universalise it.

In the *exploratory phase* a limited number of schools participated, selected by the ministry through a public tender. The schools committed themselves to incorporate ICT into their curricula. The basic decisions taken were:

- Creation of infrastructures to facilitate ICT access and use:

- Provision of hardware for the schools, with capacity for current and future applications, reliable and in sufficient number for effective and ongoing classroom use
- Software and content related to curricular objectives and the necessities of students, easily utilisable by instructors
- Communications networks between persons and institutions

- Ongoing training of instructors and training networks:

- The instructor is the key figure in any innovative process in the school
- The goal of the training is to prepare the instructor with the theoretical and practical instruments necessary to analyse the resources based on ICT and to select the most adequate; to prepare him or her to justify the use of given technological resources, why to use them and how to put them into practice; and to reflect on his or her own practice and evaluate the use of technological resources and the results obtained in teaching and learning
- Human training infrastructures are created, with a national network of Instructors' Centres and trainers of trainers in ICT in each one of them.

- Implantation of the plan in schools, organisational changes:

- A coordinating instructor is named, and his or her class schedule reduced to permit them time to coordinate the teaching staff participating in the plan in each school.
- An annual budget is assigned to each school, to cover the costs of teaching materials.
- The question of technical assistance and maintenance of computers, which is carried out by specialist companies, is paid for by ministry funds and carefully supervised.

- Follow up and evaluation of the project:

- A follow-up committee was created in the central administration to tailor technical and administrative measures to the problems which appear in the implementation of the plan. This committee also contributed constant support for the actions carried out in schools, with the assistance of the trainers in the Instructors' Centres.
- Evaluation of the program, research into the contexts, conditions, processes and products of the plan, are all considered decisive from the outset. An internal evaluation is planned under the direction of the ministry, with the division of trainers of the Instructors' Centres and the instructors, considered to be agents of educational change. An external evaluation process, independent studies which explain the limitations and advantages inherent in the plan, is also considered indispensable. In the Spanish case, several evaluations are carried out by the university on the national level, and by the OCDE on the international level.

In the *extension phase* (significant increase of the number of schools incorporated into the plan)

- The new schools which desire to participate must elaborate a didactic project to include the incorporation of ICT in the curriculum in order to be able to participate in the public tender for participation in the plan.
- As the number of schools increases, the figure of Provincial Coordinator is created in the provincial educational administration, to dynamize the introduction of ICT in the province.
- A Coordinator of Computer Materials is named in all participating schools, as a substitute for the coordinator of the teaching team participating in the plan. This coordinator's task is to manage the development of the teaching projects and to be responsible for the computer room, a job for which he receives specific training.

Generalisation Phase

This phase has three objectives:

- To extend the achievements of the previous phases to all schools
- To provide permanent support to schools in the implantation of ICT-based learning
- To provide support for the development and evaluation of educational content based on ICT, in accordance with the technological development and the transformations in the educational world

(Information provided by Francisco García García y Carmen Candioti, of the CNICE)

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Dirección web: www.cnice.mecd.es
Tléfono: 91 377 83 52

Publication "Evolution of Professional ICT Profiles in the Knowledge Society," ANIEL and COIT with the collaboration of the MCYT

This book contains a set of reflections regarding the definition of professional profiles related to information and communications technologies, and in particular to the training requisites and their linking with current university educational formats and with the proposals for the future which are on the table.

The publication was one of the first contributions to the subject of expression, identification and evaluation of professional ICT profiles in which the university and the private sector have worked together. The study was based on surveys and panels of experts from the electronic and telecommunications sector, analysing the current situation of new professionals entering into an environment in continuous change.

URL: www.aniel.es/

Model of Education for Development, UNICEF

The model for education for development revolves around a series of global concepts which guide all of the activity of UNICEF's "Enrédate" program:

- Interdependence. This refers to the awareness of the interconnection between everything that exists in the world. The planet maintains a delicate balance in which everything is interconnected. In this way it is easier to understand and to be capable of relating what one does at the local level with the wider context at the world level.

- Images and perceptions. By means of the exploration and the knowledge of different ways of living in the world, one learns to identify stereotypes and ethnocentric attitudes.

- Social justice. A question of acquiring knowledge regarding the principles of human rights and how they can be denied or fomented

- Conflicts and their solution. The understanding of the diverse sources and causes of conflicts and how they can be resolved, and learning to combat in favour of peace in all of its manifestations

- Change and the future. Understanding that the measures which we take today affect the future

URL: www.unicef.org

Some Recommendations and Practical Lessons

We must create methods and academic content which educate infants and young people in the ability to reflect, select, have a critical sense and the capacity to participate in new media, and in the information saturation which engulfs us.

We are facing an opportunity to foment new values such as worldwide solidarity, peace, tolerance, social justice and a heightened consciousness regarding environmental issues. We need to encourage young people to participate actively in the construction of the future in their communities.

The experience of profile analysis for the information society has been contrasted in situations of exponential expansion in the sector and in situations of profound crisis. Therefore the adjustment of the reality to the necessities of the productive sectors is quite exact. Fewer top-level technicians are needed than we thought, but we do need more people capable of managing change and specialized in different areas of competence.

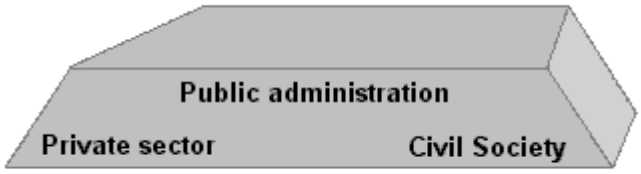
There is insufficient political leadership for the modification of the standard curricular schemes and the implantation of methodologies which take advantage of ICT in academic settings, in the acquisition of new abilities and the establishment of schemes for networked learning.

There will be no significant transformation of profiles in developing countries until girls receive the quality basic education which they need in order to participate on an equal footing in the development process.

Curricular changes must start with instructors, key figures in any innovative process in schools.

4.2.2. Teachers as Agents of Change

The competent administrations and the group of administrations which attend the educational system must seek in instructors the agents of change.



"[…] training the majority of instructors
[…] motivating the use of these tools by instructors through *specific courses on electronic learning*
[…] including in the ***academic formation of instructors*** *training in the use of ICT tools and electronic learning." (Measures included in the second phase, school settings, for E-learning from the Spanish contribution to the summit)*

Best Practices

Formation of Instructors Via Internet for the Introduction of ICT in Classrooms, CNICE.

The objective of education is to favour physical, social, affective and intellectual development. To achieve this end an official curriculum has been elaborated which is open and flexible, as well as prescriptive, insofar as it permits a wide variety of adaptations and concretions. This curriculum is based on certain theoretical tenets of a psychopedagogic and epistemological nature which make clear when, how and what is to be taught. The integration of information and communications technology (ICT) into the curriculum of obligatory education should be based on these premises.

There is an evident relation between access to information and learning; information is received basically, at early ages, through exploration and discovery of the environment and the exposure to new experiences. Nowadays, the volume of existing information, the rhythm at which it is generated and the rapid and constant changes in all walks of human activity, lessens the importance of the acquisition of knowledge, a process which has classically been conceived, above all, as a question of accumulation. It seems necessary that teaching, beyond the mere presentation of a body of knowledge, offer strategies and resources necessary to confront, from the earliest years, novelties, changes and innovations of all types, communicating an attitude of interest, of constant discovery and learning.

The innovation which the introduction of new resources into the classroom supposes can influence, and even determine, some characteristic aspects of the work in the classroom: methodology, type of groupings, use of physical space, the role of the instructor, etc. Nevertheless, the utilisation of a given medium need not

be limited to a single form; instructors can seek others which are just as enriching or more so, as well as being innovative. The training of instructors in the correct use of ICT at any educational level is, no doubt, the keystone of this process.

Since its creation in 1987, the National Program of New Information and Communications Technologies, today the National Centre of Educational Information and Communication (CNICE), has considered the training of instructors for the introduction of ICT in the classroom as a priority. Initially the training took place live in educational centres, by means of work groups coordinated by a person responsible for technological matters who was given specific preparation. Today 90% of instructor training in ICT is done at a distance, through our Training Server and supported by a team responsible for its functioning. Nearly 80,000 instructors have been trained by the CNICE.

Objectives

The **initial objectives** which were laid down in the different plans, projects and programs relative to instructor training were the following:

1) To give technical support and adequate training to use the computer as a teaching resource and as a means of methodological renovation, with the object of improving the quality of teaching
2) To provide instructors with the theoretical and operative instruments to analyse and select the most appropriate means for each setting and specific task
3) To improve the academic and administrative management of the centres

The National Centre for Educational Information and Communication has elaborated these initial **objectives** in others which are more **specific**:

1) To offer permanent training in accordance with teaching necessities, especially regarding the use of the computer as a teaching resource and as an methodological alternative in the process of teaching-learning
2) To favour the integration of the new information and communications technologies (NICT) into the educational sector:

    - Providing support material in an efficient multimedia format
    - Sharing materials and creations elaborated by other instructors
    - Promoting initiatives for web site creation and multimedia teaching units.

Characteristics of the training

The training which is given to instructors by CNICE has the following characteristics:

- It respects the learning rhythms of students.
- It facilitates an effective follow up through personalised telematic tutoring.
- It adapts itself to personal and professional interests.
- It permits access to various resources and to tutoring.
- It imposes no space nor time limitations.
- It makes possible both online and offline communication, real time and deferred.
- It uses multimedia materials via Internet or on CD-ROM.
- It employs tools which favour active networked learning.

The Team

The distance training which we offer instructors requires a team of people with clearly defined functions:

- The system administrator
- The data base manager
- The tutoring coordinator
- The tutors
- The training director
- The training server manager

Materials and Resources

The distance formation which CNICE imparts relies on the following materials and tools to create an effective learning process:

- Multimedia materials (CD-ROM)
- Email
- Virtual classroom

These three elements are essential in all the courses, although there are some teaching experiences which utilise other materials, such as printed teaching guides or videos.

Tutoring

Though the courses which CNICE offers instructors are based on self learning, they do incorporate an element which is fundamental to their effectiveness: **personalised telematic tutoring**.

The tutors:

- Know their students
- Maintain an individualised follow up of their students through notes and other tools
- Are well acquainted with the teaching materials and prepare complementary documentation (addenda, practical exercises, problems, questions, etc.), which facilitate the students' learning processes

Considering that students start off from different levels of knowledge and that the rhythm of learning and the time they can dedicate also vary, the task of the tutor requires a great deal of personalization. He or she must get to know the students well, plan the course carefully and propose to students the complementary activities they need, based on individual necessities.

Evaluation

Evaluation must be considered from two points of view, that which the student applies to himself and that which the tutor contributes.

- **Self Evaluation:** The students themselves are asked to fill in a series of questionnaires as part of the virtual classroom program. They have direct

access to the results and can repeat the questionnaire as many times as they like. The tutor can also consult these data, though they do not affect grading.

- **Tutor's Evaluation:** The tutor evaluates students at three fundamental stages:

- Initial evaluation: This consists of obtaining information from students concerning their previous knowledge on the course subject matter, the use of technological materials, distance training, etc.
- Ongoing evaluation: This permits instructors to advance the instruction process by carrying out constant individualised follow ups on students, their orientations, results, etc.
- Global final evaluation. The tutor will evaluate, through an exercise of a global character, the student's capacity to put into practice the knowledge acquired during the course. The results of this evaluation will determine if the student has finished his or her training process.

(Información proporcionada por Francisco García García y Victoria Milicua Landa, del CNICE).

Correo electrónico: victoria.milicua@cnice.mecd.es
Dirección web: www.formacion.cnice.mecd.es
Tléfono: 91 377 83 61

EducaRed, Telefónica Foundation

The EducaRed program is supported by the Telefónica Foundation, Telefónica and the majority of organizations in the Spanish educational world, including the principal professional associations, parents' confederations and trade unions.

This program, besides providing infrastructures and services, is oriented to the exploration, experimentation and putting into generalised practice of innovative educational experiences. The program concentrates on methodologies which incorporate both new uses of the web and services which are pedagogically innovative, as well as new forms of dealing with the knowledge society, with special emphasis on interactivity, distance working and virtual teaching. The aim of the program is to create an environment of reflection in which different experiences can be contrasted, with special attention to the consequences for citizens' lives and personal development of new systems of virtual learning.

It coordinates the creation of catalogues of educational content, as well as promoting and supporting initiatives which improve educational content for the web.

In one of its sections, EducaRed suggests a guided visit to specific content directed to teachers, among which we find:

- *The School of New Technologies*: courses for learning to take maximum advantage of ICT
- *Information for Instructors*: a powerful search engine for official information for teachers; updated frequently
- *Educational Resources*: a section dedicated to educational resources

- *Programs for Teachers*: useful programs for teachers: scheduling, exams, exam correcting, control of grading, etc.
- *School Twinning:* students and teachers from different, distant schools work together on a common project which in integrated into the curriculum
- *Teachers Lounge:* Thematic forums, organized by materials, where teachers can share experiences and knowledge

URL: www.educared.net
Telephone: 900 504 504

Some Recommendations and Practical Lessons

The training of instructors is a key factor in the development of the information society. We must deal with technological knowledge, pedagogy through ICT, the value of new multimedia content and opportunities for change in learning processes.

The universities and their professionals can launch strategies and initiatives as exercises in social responsibility in the integral formation of the society's young people, and not only in academic knowledge.

Professors can take advantage of the flexibility which ICT offers and the associated teaching resources to attend special situations, such as children who are hospitalised or members, both young people and adults, of the prison population. The role of the teacher, whether in person or online, is fundamental for the success of these experiences.

Teachers normally work in rigid organisational schemes with tightly scheduled activities, all of which makes innovation difficult.

Many students have mid-level knowledge and a good working familiarity with technological subjects. This introduces an element of insecurity in teachers, who require specific support measures in this respect.

Teachers need technical support and adequate training if we expect schools to use computers as teaching tools and means of methodological renovation.

4.2.3. Educational Software

Both specific E-learning content and the use of ICT at all educational levels can be greatly facilitated by the use of free, open-source software.

*"[…] to equip secondary schools with **educational software**, utilising, insofar as possible, the advantages of free software" (Measure included in the first phase, school environment, for E-learning of the Spanish contribution to the Summit)*

Best Practices

EducaRed, Educational Software, Telefónica Foundation

EducaRed includes in its web portal, www.educared.net, a section which offers programs both for curricular work (specific for each subject) and for extracurricular activities such as:

- Academic management. Includes useful programs for the management of schools
- Programs for instructors. Useful Programs for instructors: schedule planning, exams, exam correction, control of grading, etc.
- Parent support programs. Software for helping children to improve their academic performance, study techniques, motivation, orientation, etc.
- Support programs for students. Useful programs for students: calculator, dictionaries, translators, etc.
- Educational games. To learn through play.
- Tools. Computer security software, anti-virus programs, filters, proxies, etc. What they are, which are the most useful, where they can be found, how to download them

URL: www.educared.net

GNU/Linex, the Junta de Extremadura

Linex has been adopted as the "official" operating system of the Junta de Extremadura. The regional government has distributed it freely for use in schools, official organisms. Basically it is a version of the Debian Linux distribution for Extremadura, in which the application icons and screen backgrounds have been personalised with scenes from Extremadura. Users can use it and make copies without any restriction, since this type of program is not subject to any licensing restrictions.

There are several programs for use in schools:: Openoffice suite, an office automation program similar to Microsoft Office; navigators; email programs; multimedia etc... Teachers are familiarized with the software through courses, with the objective that Linex become the future working platform of the teachers of the region and be adopted universally for general use. *(More information in the paper, "GNU/Linex (Programas libres - Free software)" in section 3.5., The Role of the Administration.)*

URL: www.linex.org

EducaMadrid, School Management, Community of Madrid.

The objective of EducaMadrid is to facilitate and approximate the advantages of online school management techniques to the personnel of the Madrid school system. It permits them to carry out online a variety of processes which formerly were only possible in person, such as processing of forms, requests, or queries The EDUCAMADRID network includes currently 1,500 teaching centres, along with the community's educational administration. It is based on a high-performance network which permits information to flow freely even at times of peak academic activity, times which also see increased demand which generates intense traffic in the network. The project has taken extreme care over security issues, due to the nature of the data in question and the extension of the network to Internet.

The educational web portal, EducaMadrid, is equipped with platforms and communications tools via Internet, resources and email accounts for teachers and students.

URL: www.madrid.org/educamadrid

Some Recommendations and Practical Lessons

The adoption of free software permits the development of educational software with a local slant and strengthens local creativity.

The legions of volunteers who develop software applications form a massive motor for innovation and the creative spirit of citizens.

One of the keys to the success in the implantation of free software is the accompanying policies of support for the creation of businesses based on new technologies. We must go hand in hand with entrepreneurs with strategic business orientation, virtual business nurseries and subsidies. This is the seedbed of sustainability for the projects and for the creation of employment and wealth in the region.

In order to favour the use of free, open-source software as a mid and long-term alternative, we must make clear that the battle is not joined in terms of the acquisition of programs, since their development is only the first link in a long chain (versions, maintenance, compatible applications ….) and that the traditional software companies can cede that first link, so as not to lose the rest.

We must make a clear analysis of the schemes of imparting value-added services, of the maintenance and upgrading of software, as well as the associated costs. Without this, the installation of free software would not represent a sustainable option.

Existing networks have permitted the pioneers of the information society to situate themselves in dominant positions. The monopolies thus created in the free market require new regulatory schemes.

4.2.4. Shared Resource Centres

Beyond mere applications, it is necessary to optimise the use of all types of academic and pedagogical content.

Best Practices

Portal Development Gateway, Development Gateway Foundation

The "Development Gateway" portal offers users access to information regarding development, resources and tools, providing a space to contribute to knowledge and share experiences. The portal helps users to navigate through the growing mass of information which is available on the net and to create virtual learning communities capable of directing their members to key development matters.

The virtual communities are guided by development experts and are centred on the main themes related to development. Their advice is intended to point out the most useful resources available in Internet. In addition, registered users can contribute commentary on articles and receive alerts which permit them to access new content in their line of interest.

URL: www.developmentgateway.org

Disc@pnet, Fundosa Teleservices

Fundosa Teleservices has done the strategic planning and is leading the integral development of the Disc@pnet, web portal, an initiative of the ONCE Foundation with the support of the European Regional Development Fund to foment the presence in Internet of disabled people.

On the national scene, Disc@pnet is currently the portal of reference on the subject of disability. Its traffic statistics are similar to those of the United Kingdom's most important disability portal, and there is no other similar portal available in Spanish on the web. The initiative is carried out by a highly-qualified, dedicated Disc@pnet team with the support of the rest of the Fundosa Teleservices personnel.

Email: discapnet@teleservicios.com
URL: www.discapnet.org

Walqa, Internet Excellence Centre, Government of Aragon

Walqa, is an Internet Center of Excellence and E-Commerce developed in collaboration with several technological partners: Microsoft, Cisco Systems, Intel, Hewlett Packard, Banco Santander Central Hispano (BSCH), DHL and Telefónica Data. All of them have collaborated with a program previously established by the government of Aragon with Barrabés Internet for the development of Walqa and the achievement of its objectives.

The purpose of Walqa is to disseminate entrepreneurial spirit throughout the society, and especially among small and medium-sized companies by providing access to new technologies and to innovation through the creation of a an Internet Center of Excellence and E-commerce dedicated to the development of a series of information, training and consulting activities. The final objective is to propitiate the growth and quality of companies both inside and outside of Aragon through the use of new technologies in their businesses.

Email: **infowalqa@walqa.com**
URL: **www.walqa.com**

Some Recommendations and Practical Lessons

Shared resource centres should not only facilitate valuable learning content which can be re-utilised and/or adapted, but they should also select, classify and contribute a stamp of quality which will help people to sort the wheat from the chaff in the midst of the information saturation in which we find ourselves.

Specialist online support for the adequate use of new shared resources multiplies their utility and efficiency.

The mounting of pilot projects can be faster and more effective if it is based on resources which are already developed (so as it is not necessary to invent the wheel in every project.) Testing permits the necessary adaptations for the transformation of a pilot program into a business.

The mere amassing of information without solid criteria, good structuring and guided access routes does not make a shared resources centre.

Adequate management of the rights to use the different contents and methodologies requires a clear cataloguing based on whether the rights are in the public domain open to free usage, sharable private rights, private rights subject to payment…

A summary look around shows that different regions, countries and territories are dedicating massive efforts to the development from zero of applications, content and methodologies. Nobody is making an effort to coordinate these initiatives for the re-

utilisation of their various elements, not even within single countries. The ill use of public economic resources, of knowledge and of creativity is a luxury which is difficult to understand.

4.2.5. Twinning of Schools

One of the possibilities offered by ICT is that of creating school networks where students and teachers can communicate directly and carry out projects jointly, originating an authentic virtual educational community.

"[…] to promote **twinning between schools** of different countries" *(Measure included in the first phase, school environment, for E-learning of the Spanish contribution to the summit)*

Best Practices

United Classrooms, Telefónica Foundation

Within the EducaRed web education program (www.educared.net), the Telefónica Foundation convened for the 2002/2003 school year the school twinning program "United Classrooms," with the following objectives:

- to promote the teaching use of information and communications technologies,
- to extract the most from these technologies as resources for teaching and education, and
- to help combat the risk of exclusion in the access to these technologies.

Through the program, teachers and students selected from 99 learning centres in Argentina, Peru, Chile, Brazil, Morocco and Spain have been in contact to carry out their educational exchange projects, taking advantage of the possibilities offered by information and communications technologies.

For this program, United Classrooms, equipped the selected centres and provided the participants with the necessary telematic tools, all in the framework of the EducaRed virtual community.

Each participating centre was twinned with a centre from another country in order to carry out a project related to one of the following themes:

- Nature conservation
- Philosophy and ethics. Education in values for living together
- Lifestyles
- Knowldege of surroundings. Discover where you live
- Rural schools
- Cultural interchange. Broaden horizons

In order to work around the differences in existing curricula, four age categories were established:

- Category A: 10 to 11 years
- Category a B: 12 to 13 years
- Category C: de 14 to 16 years
- Category: 17 to 18 years

The United Classrooms website, within the EducaRed portal, was the space of reference for the participants. Besides permanent contact with the team of advisors, the site offered the twinned centres the necessary tools to permit them to work together: chat, forum, message board, web design programs, etc.

For the final phase of the program, the projects carried out by each twinning exercise were published in the EducaRed portal.

URL: www.educared.net

Some Recommendations and Practical Lessons

Promoting the use of ICT for cooperation and development is a task which can be initiated in infancy. The collaboration among children of different countries promotes the interchange of cultures and knowledge, while it teaches them to use the technologies and collaborate in a networked way.

This type of experiences strengthens and adds quality to education. The knowledge gained is much more intuitive, real and lived that that which is learned in books. The geographical diversity and the interchange of experiences are not only richer, but also more significant, thus giving deeper roots to the knowledge acquired.

The twinning of schools stimulates the creativity of teachers. The participating teachers developed new teaching methods thanks to the exchange of experiences and ideas with colleagues from all over the country.

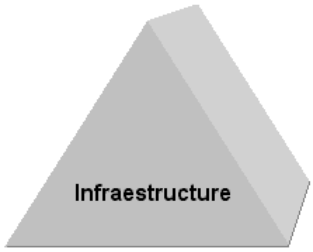
School twinning through ICT can only take place if the schools are equipped with the necessary computer materials and telematic tools.

Due to the technological differences which can exist, it is preferable to base the shared projects fundamentally on the interchange of texts. If images and graphics are exchanged, the visual language should be used correctly.

The twinning concept makes increasingly more sense with more experiences over time. An authentic collaboration relationship can only be established if teachers and students can relate with many virtual classmates in different classes, creating a variety of communities or virtual classrooms.

4.2.6. Internet from School

In order to advance in the implantation of the ICT's both in education and in the rest of society, the first requisite to guarantee real access in schools.



" […] each secondary school ***must be equipped with a computer connected to Internet and dedicated to educational purposes*** *(or other platform which permits access to IS services) by the years 2005-10.* ***At least one teacher per center*** *should receive basic training in ICT tools. This objective should be met in each country in at least 20% of their schools on the occasion of the Tunis meeting. (Measure included in the first phase, school environment, for E-learning, of the Spanish contribution to the summit)*

[…] "to include ***centres of primary education****" (Measure included in the second phase, school environment, for E-learning, of the Spanish contribution to the summit)*

Best Practices

Digital Village, CNICE

The Digital Village program arose during the 1997/98 school year as an initiative of the Spanish Ministry of Education, Culture and Sports (MECD) for the integration of new technology in rural schools. Its growth and development was carried out in three phases: the experimental phase (1997/98), the extension phase (1998/1999) and the generalisation phase (1999/2000).

More than 2,500 small schools and some 7,000 teachers who taught some 70,000 primary students participated in the provinces of nine Spanish Autonomous Communities in which the MECD was directly responsible for education.

All of the schools in towns and villages of fewer than 5,000 inhabitants participated in the Digital Village program. Rural education in Spain is organised through Grouped Rural Centres (CRA), groups of small schools in villages (usually a few hundred inhabitants) situated in close geographical approximation and with a small number of students of all ages under a single teacher in each school (an average of ten boys and girls.) The members of each CRA make up a single teachers' staff, thus providing the structure for a professional team effort. The Digital Village program was also extended to public schools of 1, 2 or 3 units, with an average of 20 students per unit in larger villages.

In the year 2000, the MECD completed the transfer of education competencies to all of the Autonomous Communities where it had previously run the educational

systems directly. Once this transfer was carried out, the Autonomic Education Administrations continued to develop the program.

Actions were carried out basically on three fronts: communications infrastructures, computer infrastructures and training in the educational use of information and communications technologies.

The Digital Village program favoured the consolidation of a model of sustainable growth in rural areas, the reinforcement of local identities in a global world, and it helped teachers in their professional tasks, permitting them to dedicate more time to give personal attention to each student thanks to the use of technology as a teaching tool.

Since its initiation in the pilot phase, the regional and national news media have given good coverage to the program. At the same time the experience was presented in different forums by directors of the Spanish Ministry of Education, Culture and Sports, which contributed to consolidate the idea that the introduction of the information society in schools could not be achieved without taking into consideration the rural schools.

The perception of the teachers who participated in the project, obtained through direct surveys regarding different aspects of the program, was that the Digital Village program had brought innovation and fresh methods to ordinary classroom activities and had contributed greatly to motivating their students.

(Information provided by Francisco García García, Juan José Blanco Villalobos, Beatriz Sánchez Esteban, of the National Educational Information and Communications Center)

URL: www.cnice.mecd.es/Aldea_Digital/index.html

Hole in the Wall, International Finance Corporation, NIIT

This project, called "Hole in the Wall," encourages underprivileged boys and girls in India to learn about ICT through Internet "kiosks." NIIT has determined in its studies that, if given access, children are capable of learning the use of Internet rapidly, which in turn increases their interest in new knowledge. In this way, "Hole in the wall" hopes to improve education with a minimum of supervision. This has been called "minimally invasive education," a teaching method which uses this learning environment to generate motivation and induce children to learn, with a either minimum or no supervision at all on the part of teachers.

Currently the project has programmed the installation of 100 "kiosks" in 60 places in India, of which 48 are already functioning. The project permits the participation of boys and girls on an equal footing, and includes all social classes.

URL: www.niitholeinthewall.com

The Santa Ana de Allende Case, México, Technical Institute of Superior Studies of Monterrey, Viritual University

With just one telephone for 1,400 people it is not easy to make a call in this village in the mountains of Mexico. Nevertheless, you can send an email...

High on a hill, in a classroom in the village's only school, 18 computers and a 64 Kbps satellite connection offer farmers, housewives and students an umbilical cord with the rest of the planet. This technology has brought university education to people who would otherwise have had to leave their home village and try their luck in cities, if and when they could afford to pay the costs.

In this way students can obtain university degrees from the Virtual University, an Internet-based project promoted by the Technological Institute of Monterrey. And it is not only students who benefit. The rest of the inhabitants can shop, send messages or obtain information from the rest of the world via Internet. In a village which lacks even newspapers, some residents use the computers to read the news, while others maintain contact with emigrants who now live in the United States.

Currently there are five installations like that of Santa Ana within the same Mexican state. Their creation cost some $150,000 each, each one being equipped with 15-18 PC's.

Students receive their assignments and study materials online through the web portal of the Virtual University. They also have online access to study groups and receive online tutorials. Examinations are also carried out online.

URL: **http://www.ruv.itesm.mx/**

Huascarán Program, Ministry of Education, Peru

The Huascarán program is the most ambitious initiative of the Peruvian government in the field of information and communications technologies applied to education.

Its strategic objective is the extension of educational coverage in the country and the improvement of its quality through the use of information technologies.

The Huascarán modules are made up of equipment, programs, links and courses which will be implemented in learning centres. Diverse Huascarán modules have been designed, taking into consideration pedagogical criteria, the student population of each centre, as well as the technical requirements of the different zones where they are located.

Huascarán Module Model	Number of Students		Num. of PC's (approx.)
User Module I –A (with public energy)	0	200	3
User Module I –B (with high energy)	0	200	3
User Model II	200	400	9
User Model III	400	700	16
User Model IV	700	More	39

Email: **webmaster@huascaran.gob.pe**
URL: **http://www.huascaran.gob.pe/**
Telephone: **(511) 215-5870**

Some Recommendations and Practical Lessons

The introduction in educational centres in rural areas of communications infrastructure, computers and training plans for public employees in the education sector, professors and students, should be accompanied by a broad model of rural development: sustainable growth, reinforcement of local identities, communication among centres of the same areas…

Integrating computers and telecommunications into classrooms encourages students to use new technologies. It is a practically painless way to achieve the computer literacy of students.

Intensive communications and dissemination plans enter effortlessly into the population of young people. Campaigns for children, who will be the motor of the mature information society, can lay down the foundations for a constructive and solidarity-oriented new networked society.

The extension of broadband, equipment, access and communications costs, teacher training, along with content and applications, requires levels of public investment which are not always possible in the desired time frame. We must seek progressive, assumable step-by-step schemes and co-investment plans.

The absence of ICT awareness and activation plans in schools invalidates their utility

Children and adolescents do not play the leading role which they might as innovators, creators and feeders of horizontal networks and, why not, leaders for change.

4.2.7. Ongoing ICT Training through Organizations

Ongoing training offered by companies can reach a greater number of workers through ICT, since they facilitate access both from the point of view of effective time distribution and the place where it can be carried out. This type of training can also guarantee that workers are familiarised with emerging technologies.

" […] to provide employees in the workplace the possibility of extending their training by electronic means. By the year 2010 this possibility should exist in all companies of more than 200 employees, at least in subjects related to ICT. By the year 2005 it should be possible in 70% of companies of more than 500 employees. In this case the commitment of the private sector is a vital factor." (Measure included in the second phase, work environment, for E-learning, of the Spanish contribution to the summit)

Best Practices

FORINTEL, Ministry of Science and Technology, Spain

Initiated in August of 2001, this program dedicates special attention to groups of workers with most risk of exclusion. In concrete terms, the emphasis has been placed on the cases of women and employees of small and medium-sized companies.

Until now, and from the beginning of the program two years ago, almost 400 projects of the 500 received have been evaluated, and 173 of them have been approved. The subsidies destined for these projects amount to a 21.4-million-euro layout on the part of the Ministry of Science and Technology, and have permitted the participation in training programs of more than 150,000 workers.

The type of training provided has been in person, as well as distance learning, or a mixture of both. Depending upon individual cases, it has been carried out either within the companies or in specific training centers.

Two of the new courses most in demand have been those which refer to network security and the uses of Internet in business.

Email: forintel@mcyt.es
URL: www.forintel.es/
Telephone: 902 360 571

"Portal ePersonas" Project, Cajamadrid

In order to encourage the natural approximation of the employees of the Caja Madrid Group to the information society, and as a necessary complement to the "Internet at Home" project, Caja Madrid has developed the **Portal ePersonas** project.

The objectives of the Portal ePersonas are:

- to facilitate a new channel capable of improving the internal efficiency in the Human Resources Department and individualising the relationship with the professionals of the group. The benefits for the employee are an increase in his or her autonomy and self management of information – which contributes to the conciliation of their professional and family lives, and in an increase in the employability of the persons of the group by fomenting self-learning processes (E-learning.)

- to contribute to the incorporation of Internet use in the daily lives of the families of the group, with the corresponding benefits: incorporation into the information society on an equal footing, access to complementary training—especially in Internet and ICT, rapid access to public information –especially that related to online public services, and access to support services for young people, women and the elderly. Also included is access to a dynamic environment of electronic transactions, via the incorporation of a variety of shops into a Virtual Mall.

Email: **info@netpersonas.com**
URL: **www.netpersonas.com**

Some Recommendations and Practical Lessons

Companies are decentralising an important part of their activity. A part of their corporate plans for ongoing training should act as agents of change in developing countries where they operate.

Companies can be instrumental in introducing their employees and their families to the information society through ICT training plans, teletraining and web portals with content of professional, family and personal utility.

The productive chain links the activity of public administrators (they are clients, legislators and opinion leaders) with large companies, these with small and medium-sized firms and these, in turn, with autonomous professionals. ICT formation strategies can be designed to function in a cascade

The consolidation of the information society demands a clear adjustment of our educational systems to new business necessities which have not yet manifested themselves. The coverage of this gap by ongoing training systems requires concerted support on the part of public administrations, social agents and businesses.

The externalisation of the activities of large companies and the precariousness of resources of small companies and autonomous professionals, assures that the number of professionals who are responsible for their own training continues to rise. The offer of teletraining can be a basic pillar for individual models of ongoing training.

In order to take advantage of the full benefits of ICT in high-value training plans in organizations, we must overcome the paradigms of in-person training, and the constant search for ways to cheapen ICT-based training. Personalization, multimedia resources and expert tutoring are expensive.

4.2.8. Institutional ICT Training for the Unemployed and Groups with Special Necessities

With ICT we are able to open doors to valuable ongoing training for the unemployed. It would be interesting if this knowledge were acquired from other workers, unemployed or retired persons capable of putting their quality knowledge at the service of others.

If we want to attend the specific necessities of the large groups who attend adult education classes, always with the support of public and private structures, we must include ICT formation as a permanent piece of the system.

*" […] all courses for the unemployed or for workers imparted with public support should include a **common module of ICT formation** by the year 2010. This measure should be carried out in every country in 30% of courses for the year 2005." (Measure included in the first phase, work environment, for E-learning of the Spanish contribution to the summit)*

Best Practices

Monographic Courses for Women Entrepreneurs in Rural Environments and Teletraining Programs, Women's Institute, Ministry of Labor and Social Affairs

The Women's Institute of the Ministry of Labour and Social Affairs, has been developing measures for some time now to encourage the participation of rural women entrepreneurs and business women in the labour marketplace.

Understanding that the competitiveness of a business depends upon the training of the people who work in it, the Institute has elaborated a series of monographic distance-training courses edited in CD-Rom, incorporating an interactive system which provides the necessary study tools for businesswomen, as well as facilitating their access to self training, thereby obviating the necessity for travel.

These courses have been co-financed by the European Social Fund and deal with different questions of practical interest aimed at improving daily business management, at the same time as they help to foment the use of new technologies.

Along these lines, the Women's Institute provides a program of teletraining aimed at extending knowledge of and access to new information technologies to larger numbers of women all over Spain, thus eliminating both geographical and time barriers to learning. The training offer in this mode:

- ➔ incorporates courses on different material (initially the use of computers) and with different levels of complexity, with the object of offering students a wide range of training options adapted to their necessities.

➔ permits students to follow the courses with total freedom in terms of hours, either from their own homes or, in the future, from a Teleservice Center provided by local and regional administrations associated with the Teletraining Program of the Women's Institute.

The students are constantly supported, both in technical and methodological aspects and in terms of the content of the different courses which are offered.

The Teletraining Program has a dual objective: on the one hand to bring the world of new technologies to women and, on the other, to adapt women's knowledge to the modifications which the new information and communication technologies impose on the labour market.

Email: **inmujer@mtas.es**
URL: **http://www.mtas.es/mujer/geactest.htm**

Vivernet, Junta de Extremadura

VIVERNET, Nurseries for New Era Entrepreneurs (Viveros de Emprendedores en la Nueva Era), is a program of the Education, Science and Technology Council of the Junta de Extremadura, in collaboration with FUNDECYT, designed to facilitate the development of new businesses in the environment of the Information society by providing resources for young entrepreneurs with creative capacity.

VIVERNET currently has two nurseries functioning, located in the cities of Cáceres and Badajoz, a virtual space, www.vivernet.com and a travelling support team which works in the rural areas of Extremadura.

VIVERNET offers a series of logistical resources, information services, counselling, technological, legal, business and commercial services, as well as ongoing training in business practices, information and communications technologies, information and knowledge management, besides the development of initiatives designed to encourage business cooperation and the exchange of knowledge, ideas and experiences.

Email: **info@vivernet.com**
URL: **http://www.vivernet.com**

HOPE Project. Schlumberger Sema, Enred Consulting, Labor and Penitentiary Features, Pouliadis Associates Corp., University of Athens, Arsis, TEI.

HOPE is a project which is partially supported by the European Union through the Technologies for the Information Society Program (IST) of the V Framework Program.

HOPE's objective is the improvement of the learning processes of socially excluded persons, especially young people in prison, utilising interactive content adapted to specific learning programs and experimental activities.

HOPE introduces E-learning to prisoners through a platform which integrates:

➘ interactive content (text, images, videos, simulations, automatic-response questionnaires...)

- tools which permit tutors to create courses
- management modules for training plans, so that institutional directors can control the educational programs

URL: www.hope-project.org

Some Recommendations and Practical Lessons

Learning is a challenge which is not overcome merely by offering courses. Rather we must launch awareness and motivation campaigns centered on the "for what?" doubts of potential users, especially for the groups at the greatest distance from ICT.

Teachers and experts in didactic methodology should configure the atmosphere, define the learning model and describe the necessary technology, never the opposite.

Teletraining can help unemployed persons, or even those who are socially excluded, to prepare themselves for the new necessities of the labor market. Teletraining is an effective complement to in-person schemes of orientation and training. The space-time flexibility permits the configuration of more agile and continuous itineraries.

It is not easy for the least-qualified users to overcome technological barriers. The appropriate pedagogy for bringing these people to ICT should be a priority.

The student is the principal recipient, and for that reason we must establish participation and evaluation mechanisms capable of improving the system. This generally is not done.

Systems of occupational training have a capacity for prescribing new content and novel methodologies which are not always taken advantage of fully. And they are often not considered when it comes time to modify the existing norms.

Executive Summary

Executive Summary

A Summit Which Puts People at the Center of the Debate

"We, the representatives of the peoples of the world, gathered in Geneva from the tenth to the twelfth of December, 2003 on the occasion of the first phase of the World Information Society Summit, announce our common desire and commitment to build a new type of society, the information society. This society is to be founded on the sacred principles consecrated in the United Nations Charter and the Universal Declaration of Human Rights, in which the new technologies, and in particular the information and communications technologies (ICT) become an essential tool, within everyone's grasp, to achieve a more peaceful, prosperous and just world based on our human identity in all of its diversity."

These are the opening words of the declaration of principles which came out of the second preparatory meeting for the United Nations World Information Society Summit, to be celebrated in two phases, December of 2003 in Geneva and in 2005 in Tunis. The following 53 statements; the ten-point action plan which develops them; the hundreds of commentaries from member countries; the NGO's, social actors, businesses, United Nations agencies; the multitude of national events destined to carry on the debate initiated in the Summit… all demonstrate the rich, complex and hopeful debate which has arisen around the theme of the information society.

Just a few months ago a similarly effervescent debate took place, but the most frequently used expressions were "e-business," "financial analyst," "new economy," "UMTS," "empresas.com…" One of the first results of the Summit is that the neediest persons and the most urgent necessities of humanity have taken center stage in our reflections. We must take advantage of the ICT's and the new IS context to achieve a world without poverty, free of threats and with a sustainable future.

Both in the presentation of this book and in its chapters, fundamental themes are analyzed in more detail, in the context of the Millennium Declaration, PNUD reports, UNESCO, ITU; the experiences of the European Union in the construction of an information society freely arrived at among countries; the technological and sociological keys which make the information society a new reality in which we must build bridges and avoid digital gaps.

Accumulated Experinece as a Source of Inspiration

Within the preparatory process of the Summit, the Spanish vision, articulated around the themes of e-inclusion and electronic learning, has prompted the Ministry of Science and Technology to create a publication where Spanish experts can dig deeper into the subject and illuminate the path of the development of the information society.

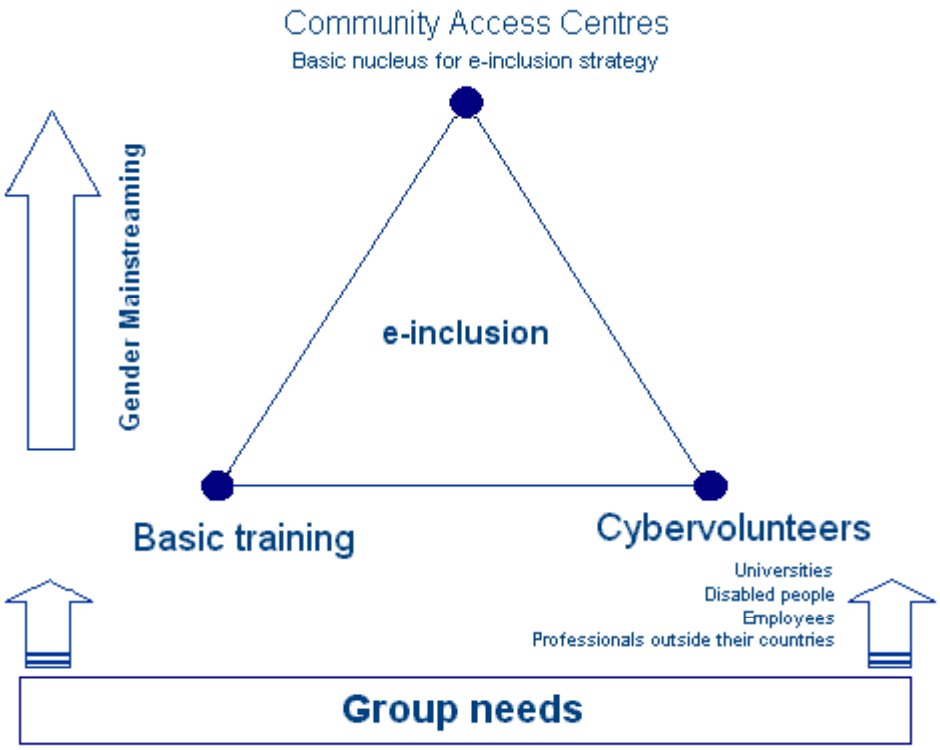
The publication is intended to enrich the Spanish contribution to the summit in three ways:

- Presenting the voices of the Spanish private sector and civil society through persons, NGO's, businesses and other organizations
- Giving special emphasis to building bridges to the Iberoamerican community in the common objective of seeing the ICT's leverage all aspects of their cooperation.
- Contributing a practical approach, gathering together best practices and lessons learned in the fields which Spain is promoting in the context of the European contribution to the Summit: e-inclusion and e-training.

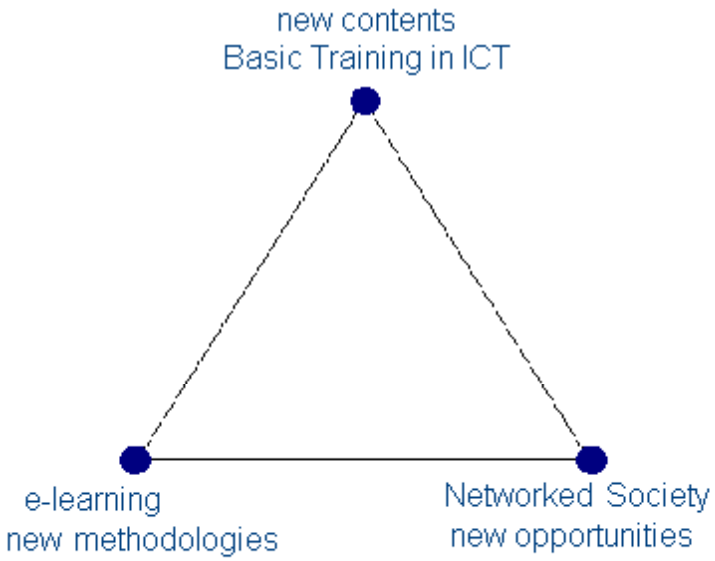
Electronic Learning and e-inclusion as Motors for Reflection

All of the pillars of the Action Plan agreed upon among countries (infrastructures, access, vested interests, creation of capacities, security, facilitating framework, ICT applications, cultural and linguistic diversity, the ethical dimension and international and regional cooperation) are essential to reduce the digital gap and promote sustainable development based on the knowledge society. Spain has decided to center their contribution on the subjects most closely related with the direct necessities of the citizenry.

E-inclusion, understood as access to technologies and tailoring for the necessities of the most vulnerable collectives, is the prinicpal challenge in avoiding the digital gap and constructing an information society for everybody. Civil society has cast the concept which can guide us: "Another World is Possible."



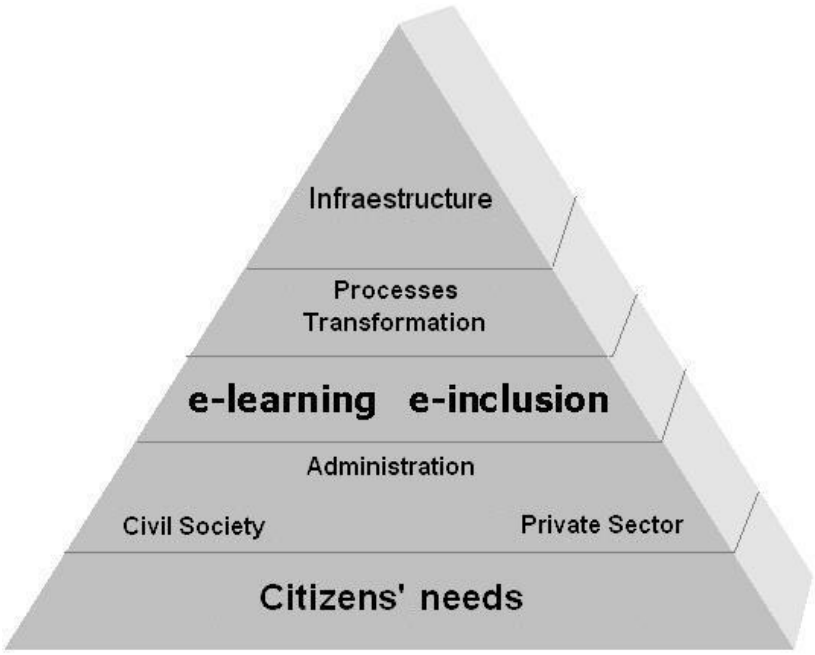
E-formation or electronic learning, can be understood as the development of the capacities which permit access to knowledge through new instruments. As a tool for the access to knowledge, it must function, on the one hand, as basic training in the use of technologies, and on the other, as a contribution to the change in teaching models and the improvement of education, including the ongoing training of teachers and other professionals.



The Debate in Civil Society

Debate is the soul of this book. Here we gather together the expert voices of people and organizations with many years of experience in projects designed to take the ICT's closer to people. Each one of these papers and examples gives a gleam of insight which enriches the debate and helps to illuminate the path to be followed.

The contributions have been structured in a pyramid model which centers a part of the debate on each level:



Necessities of citizens

- *Information for everyone*,

Federico Mayor Zaragoza, President of the Peace Culture Foundation (Fundación Cultura de Paz)

[…] The challenge is to convert "distance" education in the instrument of an education without distance, democratic and adapted to each person, available everywhere, without exclusions.
[…] Today we live in a world of "inforoutes" and "infocaverns". How can we integrate people who live at the margins of the information superhighways?
[…] Coexistence and intercultural dialogue, as well as the free circulation of information and knowledge, will be the best policies, in the face of technological globalization, to protect identities and cultural diversities democratically on the national and global scales.

- *The Information Society at the Service of People,*

Estefanía Chereguini, Technical Advisor of the General Direction for the Development of the Information Society, Ministry of Science and Technology (MCYT)

[…] I can have access to the Library of Alexandria from a remote village in Amazonia. I don't have to rebuilt it there and fill it with volumes; I just need a computer and a modem. What some people doubt is that such an access would permit an Amazon aborigine to find something there written in his own language which would in some way permit him to improve his life, or at least permit his lifestyle to survive, respecting its rhythm and customs.

- *On the Necessities of Citizens,*

Eduardo Sánchez Jacob, member of Engineers Without Frontiers and of the Spanish Coordinator of Development NGO's

[…] Overcoming the limitation of users' low educational level requires the simplification of interfaces. The ideal interface, for its simplicity, is the telephone, which permits two people anywhere in the world, to communicate just by dialing a brief sequence of digits. For the transmission of digital information we must move towards systems of text edition, email and webs in which give priority to simplicity and economy of means over potency.

- *Digital Literacy Programs as a Factor in Social Inclusion,*

Frederic Cusí, Director of Programs of the Esplai Foundaiton

[…] In the first place, what is clear is that the digital gap does not affect the different social sectors in the same way. Therefore, neither can we apply blanket solutions.

- *Older People and New Technologies,*

José Osuna Expósito, Coordinator of New Technologies in Messengers for Peace

[…] We are advancing towards a society in which information and communication are determining factors and in which knowledge is at a premium. If it's a question of knowledge, older people have a great deal to offer, given their experience.

- *Education for the Development of the Information Society. Practical Experience: Get Hooked Up with UNICEF,*

David Martín, Director of the "Get Hooked Up with UNICEF!" Program

[…] little attention is paid to the world and the language of adolescents when trying to explain the international and social reality. Get Hooked Up with UNICEF! is motivated to deal with current themes and questions of social interest approached from a critical, human and young point of view.
A complementary concern is that of generating educative and formative processes to accompany this phase of knowledge with others of reflection and practice, through didactic activities and the dynamization of teachers, animators, parents or tutors.

The Role of Civil Society

- *Towards a New Space for Collaboration among Business, the Administration and Social Entities,*

Elena Acín Aguado, Director of the Chandra Foundation

[…] The common objective of the three institutions is, in the widest sense, social cohesion. It is necessary to establish guidelines for dialogue in order to reach creative solutions which shun the winner-loser model in favor of negotiation strategies in which all can achieve their initial goals.
[…] the social entities have evolved from an assistentialist view of their activity to a much more long-term view in which, more than seeking to resolve individual situations, their aim is to create the conditions for long-term sustainable development.

- *Basic Telephony of Rapid and Economical Deployment,*

Valentín Villarroel, member of Engineers Without Frontiers and researcher at the Universidad Politécnica de Madrid

[…] a technologically appropriate option is not enough. The infrastructures require the complementary support of normative and legislative measures which permit alternate strategies to those traditionally followed in areas of greatest economic development. In some cases we should permit a more efficient exploitation of available technologies, for example, freeing up the use of WiFi technologies, or the deployment of public telephone services based on IP technologies. In others we should facilitate and stimulate the creation of small companies, providers of telecommunications services in local areas.

- *Teaching to Fish with Nets,*

Manuel Álvarez Nieto, Coordinator of the ICT Area for the Development of Energy Without Frontiers

[…] "Teaching to fish with nets" means, on the one hand, that each cooperation project intended to contribute to long-range development must contemplate the contribution that Information and Communications Technologies might make.
[…] But "teaching to fish with nets" also has another meaning. It means that the NGO's and other representatives of civil society must internalize the changes which the Information Society brings, they have to assume the Information and Communications Technologies, put them at the service of their projects and their own internal and external organizational processes and use them as an instrument for "teaching to fish."

The Role of the Private Sector

- *Business as a Motor of Innovation*

Francisco Javier Barranco Sáiz, Director of the Area of Social Projects of the Telefonica Foundation

[…] We must compute the initiatives of the great foundations which invest in social R&D along with those of businesses, guarantors of the exploitation of services which have a viable market; of NGO's which are observers of necessities and opinion leaders in their fields and, crucially, of the administrations which should lead the strategy of development of the information society for everyone, the establishment of priority lines of social research and the enlargement of pilot projects, converting them into new social services or value-added complements to those already existing.

- *Reflections on the Role of the Private Sector*

Ángel Córdoba Díaz, Subdirector General of Caja Madrid and Managing Director of Human Resources of the Caja Madrid Group

[…][…] "Within the broad spectrum of cooperation aimed at reducing the digital gap, our experience has been satisfied, not only through the achievement of concrete business objectives, but in our role as social agents (fundamentally in the development of digital literacy among people who are potential social opinion leaders)."

- *Study of the Information Society*

Birgit Gocht, Ana Ortiz y Martín Grasso, Hispanoamerican Association of Research Centres and Telecommunications Firms (AHCIET)

[…] One observes in the region a decided interest in joining the era of the Information Society — "IS." This interest is manifested with variable intensity in different countries of the region, the differences extending even to the quantity and quality of the proposals, whether the themes are education, government, health, culture, social inclusion or others. The private sector's interest in collaborating with the public sector is noteworthy. Businesses are also impressed by how much is left to be done in this field, given the relatively few projects carried out in collaboration compared to those developed as individual initiatives in both sectors.

The Role of the Administration

- *The Role of the Administration*

Mila Gascó, Senior Analyst of the International Institute of Governability

[…] State participation is essential, insofar as the transition to a new economy cannot be driven by the market only, as there exists the risk of increasing social inequalities and creating new forms of exclusion.

- *GNU/LinEx (Programas libres – Free Software)*

Council of Education, Science and Technology, Junta de Extremadura

[…] We have designed an open-source software for use in the educational field, but we also offer it freely to all citizens for private or business use. It is a key factor in that technological literacy campaign which has one single objective: to assure universal access to the whole of society, with no discrimination for any reason.

E-learning

- *Formation without Distances*
- Francisco García, director of the National Center for Educational Information and Communication, and his team

[…] One can begin learning on any given day, with the help of a person, a tutor who, wherever he may be located, will come close to the student and give him or her the learning support they need. It is true that a computer is necessary, with its vast set of data, structured contents, learning tools, etc. but it is, nonetheless, capable of putting two persons in contact: one with the desire to learn and the other who wants to assist her learning process and who may well learn something from the interaction with the student. This e-learning system, after all, invites us all to become both students and teachers.

- *The Information Society, A Door to Learning*

Ana Moreno, Director/Partner, Enred Consulting

[…] The ICT's permit us to supersede traditional learning paradigms and seek new solutions capable of democratizing access to knowledge, the pillar of any development policy.

- *How Can E -Learning Really Contribute to Social Inclusion?*

Claudio Dondi, President of Scienter Spain

[…] Although appropriate e-learning programs exist, members of less-favored social groups tend to lose motivation if they don't receive adequate support which encourages them to express themselves, recognizing the value of their vital experiences and their points of view.

- *E-Learning for Development*

Ismael Peña, Manager of Campus for Peace

[…] The change of medium obliges us to be creative, and not to limit ourselves to the mechanical repetition of the in-person educational models we have always used.

- *E-learning as the Basis for a Just Social Development in the Most Advanced Countries*

Dr. Yolanda Fernández Jurado and Andrés González García, UPCO

[…] The information society needs people qualified in the use of the ICT's and, thanks to specialized courses, many of them based on e-learning, we can help the personnel we contract to adapt to these new technologies. Obviously, we're talking about online courses developed by professionals, since everyone is aware of the number of courses with no serious educational underpinnings which are popping up on the Web, and which are essentially useless to a worker in a precarious situation.

E-Inclusion

- *Challenges and Opportunities in E-Inclusion*

Cecilia Castaño, Full Professor of the Universidad Complutense de Madrid

[…] The promotion of computer and navigation literacy is an important task which we have pending, especially for people with a low level of training and those who may be aware of the existence of Internet but don't consider it necessary either in their working nor in their private lives.

➘ *New Technologies and the Disabled*
Antonio Jiménez Lara, Director of Disc@pnet

[…] If the technology is not adapted to the necessities and capacities of individuals or is not normalized according to the access necessities of disabled persons and other consumers, if the principal information of the future is processed in such a way that some groups of disabled persons are excluded, the information society will become a threat for disabled persons the world over.
[…] If we want the information society to be a society for social cohesion and not a new vehicle for the exclusion and dualization of the citizenry, it is essential to win the commitment of the public powers, of the economic and social agents and the entire society, to develop legislative measures and technical, business and social projects which assure that the world of the disabled benefits from technology.

➘ *New Technologies and Labor Relations*
José María Fernández de Villalta, President of AUPACE, Association of Adults with Cerebral Paralysis or Other Similar Deficiencies

[…] We must urge the public powers to establish as a principal variable of vulnerability "the situation of risk or exclusion which the subject suffers" in a given moment, and not his or her belonging to a certain group, since what determines a person's status as a youth, older person, woman or immigrant are de facto variables, or of origin, which need not indicate exclusion.

➘ *Knowledge Society with Knowledge of Womanhood*
Mª Ángeles Sallé, Chairwoman of the Board of Directors of the Direct Foundation (Fundación Directa)

[…] In these new scenarios it is clear that we women must participate very actively, a participation aimed at achieving two great objectives: that of substantially improving our integration in employment and in decision-making positions.
[…] we are talking about a society still under construction and we can and must "colonize" it so as to redirect it towards an inclusive feminine paradigm. In fact, this is what many people and organizations—from different standpoints—are trying to achieve, by joining forces in this decisive moment.
[…] to change the reigning models of professional success (transformation strategy) which are leaving us at the margins of the elaboration of the rules of the game.

Transformation of Processes

➘ *"Netting" the Global Citizen into Development Cooperation*
Manuel Acevedo, United Nations Volunteers

[…] Internet and other ICT's permit all of us to be "actors" in development projects, easily and flexibly, without even leaving home. The new technologies contribute to "dis-intermediate" cooperation, thus forging direct relations among the different actors, creating an environment in which everyone learns and everyone benefits. All of this makes it possible for many different people to get involved, a key factor which will determine whether or not this century will be the century of human development.

➘ *The EMA RTV Project, The Challenge of the Information and Knowledge Society*
Manuel Chaparro, Professor of the University of Malaga

[…] A fundamental objective of EMA-RTV is ongoing training: training courses in radio and television oriented to satisfy the demand of the market and to update the knowledge of professionals working in local media, so as to encourage the use of new technologies. In the past three years EMA-RTV has imparted some 20,000 hours of training for the professionals of their associated television stations, students and the unemployed, using European funds in collaboration with the Junta de Andalucía and the Andalusian Federation of Municipalities and Provinces (FAMP). The activity is carried out in all of Andalusia's eight provinces.

➘ *The University and the Information Society: A Reflection for a Different Approach*
Silvia Arias Careaga, Director of the Office of Solidarity and Cooperation, Universidad Autónoma de Madrid

[…] the universities should also play an active role in the promotion and familiarization of the information and communications technologies among the collectives who normally don't frequent their halls, and put these tools at the service of social objectives.

➘ *The ICT's in the Service of Training to Achieve Socio-Economic Development*
(CEDDET)

[…] The objective is for the institutions which possess the content be the ones to transfer it, using CEDDET as a vehicle to facilitate the task. The idea was to maximize CEDDET's principal asset: good management. For that reason the austerity of infrastructures was the predominant note.

Infrastructure

➘ *The Information Society and Socio-Economic Convergence*
Jesús Banegas Núñez, President of ANIEL

[…] Telecommunications, besides being the infrastructure which supports the productive fabric of the economy,has become the system which interconnects operatively all types of organizations, institutions, services, products, persons y objects. Taking advantage of the enormous possibilities offered by this new interconnected economy requires that all of the potential capacity to create wealth be materially integrated into the networks.

➘ *Towards a New Model for Telecommunications*
Jorge Pérez, Full Professor of the ETSI of Telecommunications of the UPM and Advisor to the General Direction of the Business Entity, RED.ES

[…] For developing countries the problem of the gap is more complicated, since their countries lack the funds necessary to invest. And private investment will remain reticent until perspectives improve. For the moment, the solution for these developing countries is to bet on mobile voice communications, and to create as many public access centers as they can while other solutions based on wideband come online in their countries. Clearly the model which was exported to them was not valid in resolving their crisis situations, as they were trapped between their low level of infrastructures and the lack of income to improve them.

➘ *Private Sector – Economic, Social and Regulatory Impact*
Telefónica

[…] in order for the applications of the ICT's which are called for to meet the economic and social necessities of the IS can be developed, and done so in a networked way (This is one of the premises which distinguishes the IS.), it is necessary to build on a set of "layers" of support: affordable services on which those applications car run, and content, as well as infrastructures which support and provide coverage for the new multimedia services required.

Best Practices

Reading the pages of this book permits us to become acquainted with some experiences which have already been tried and evaluated. One might think that the ICT's offer new solutions to most of humanity's problems: taking health and educational systems to isolated areas, transforming whole municipalities with new schemes of citizen participation, favoring the integration of disabled groups, twinning schools, taking cyber volunteers to the farthest corner of the planet, making sense of elderly people's free time, guaranteeing connectivity in rough and remote areas, converting companies and their employee web portals into motors of training and approximation to the information society, permitting women to be the new protagonists of change, constructing a new set of solidarity values for our boys and girls, transferring knowledge among public administrations with e-learning schemes…

Nevertheless, the distance which remains between technological experiments, pilot projects, available services and affordable services... is abysmal. Reality shows us that technology permits us to reinvent reality at a vertiginous pace and with ever growing features. People move at another rhythm. ICT specialists have even discovered a bottleneck in the identification of "utilities which address the necessities of the client." Nowadays not even the tremendous marketing machinery is capable of generating necessities and cannot find, for example, those marvellous data and multimedia applications for mobile technologies or even Internet, which are going to change the lives of those who can pay for the services. Even when we look deeper into real value services (Internet in schools, in health systems …), we are seeing how pilot projects, correctly endowed with technological, human and budgetary resources, lose their effectiveness when we try to extend them to larger user groups. We lack organizations with the competencies and the capacity to lead the change; we lack specialized human resources, we lack effective mechanisms of cooperation among administrations, businesses and NGO's. Above all, we lack the budget.

It is some years since the Universal Declaration of Human Rights established the basic goals for Humanity which we are still trying to achieve: "…*Considering the United Nations countries have reaffirmed in the Charter their faith in the fundamental rights of man, in the dignity and value of the human being and in the equality of rights between men and women, and they have declared themselves resolved to promote social progress and to elevate the standard of living within the wider concept of freedom…"* it is clear that the definition of objectives, the perfectly contrasted solutions and the declared will to move forward are not enough to transform existing realities. Pilot projects are instruments to identify new solutions, and no more. However, perhaps one of the great opportunities offered us by the IS has to do with new forms of sharing solutions and reutilizing investment at low cost: the didactic content, the methodologies of action, the accumulated knowledge… To deliver telecommunications infrastructure and equipment can be expensive, to fill them with value might be cheap. But, above all, is the hope that these initiatives might convert each different group of people into the true protagonists of these transformations.

Lessons Learned

It is not easy to extract practical and valid recommendations of a general nature from the admittedly interesting contributions of the men and women who have collaborated on this book, and from the many fine experiences they have identified. Nevertheless, they have made an effort in each one of the areas of the Spanish proposal, each one within his or her own step of the pyramid, to identify valuable lessons which can help those who are launching similar projects. As an example, some of the ideas from Chapter 4 are presented in the following sections.

BEST PRACTICES FOR E-INCLUSION

- Plan for general training: We must give priority to the pedagogy of content and personalized methodology, shunning technological shop talk and seeking a learning context related to the real utility of what is learned (for example, ICT training for programs of maternal health and hygiene in poor areas). The awareness campaigns and the adaptation of the traditional training structures are fundamental pillars in this effort.

- Formation of local personnel: In order to accelerate the extension of knowledge we should rely on the most relevant actors in the development of the IS: administrations, businesses and NGO's. We need an adequate training of public employees so that they can be agents of change and collectors of the real needs and demands of the citizenry. We need to be able to build bridges for joint work among the professionals of administrations, businesses and NGO's.

- Fomenting of peoples' own content/cultural identity: the collectives which participate in the construction of the IS, should not be mere users, rather they should generate their own content and online communities in order to guarantee attention to their necessities. The voice of cultural minorities, disfavoured collectives, civil movements and local identities can be heard over these new channels. The cultural uniformity which Internet's dominant content providers are peddling tend to eliminate the wealth offered by cultural miscegenation. On the other hand, women can and should support the construction of an integrating IS, by participating in the creation of strategies and policies.

- Catalogues of best practices by profiles of necessity: Cooperation projects for development and ICT should seek exemplary results which are transferable and sustainable, not just token gestures against poverty or emergencies. The ICT's can share and distribute materials and knowledge in conditions which were unimaginable just a few years ago. Traditional attention to social necessities can be leveraged, improved and made cheaper by the use of ICT, in accessible standards.

- Cyber volunteers: One of the processes which can most benefit from the new channels of communication is that of volunteer services: creating bridges between NGO's and corporate volunteer projects, optimizing the "time for solidarity" of many people, or taking ICT specialists to places which lack them. Experience shows that a proper emotional implication of online volunteers and effective operative planning yield excellent results.

- ICT support for NGO's: Another of the organizational schemes which can multiply efficiency is the coordination among members of a single NGO, or among different NGO's. Supporting the NGO's in their awareness campaigns; integrating ICT in their spaces, which are community access points; or stimulating them to create their own content; are all valid paths for bringing the IS to everybody. The ICT with greatest penetration, the radio, is the point of the lance for these missions.

- Public access points: The best of training efforts, content preparation and adaptation of processes are all pointless if citizens, both men and women, are not provided with the proper access infrastructure. The community access centers appear to be the solution for guaranteeing this universal service, as well as becoming activators of the local society and economy. The access problem cannot be approached with wideband solutions, when 50% of humanity has never made a telephone call in their lives, and a third of humanity lacks electricity. Radio, television, cables and satellites should be combined to provide realistic solutions.

- Curricular changes: We must adapt the educational system in terms of objectives, as well as the content and methodology used to achieve them. We are faced with an opportunity to create academic applications and content capable of educating young children and adolescents in reflection, selection, critical sense and the capacity to participate in the new media and in the information saturation we are accessing.

- Teachers as agents of change: The competent administrations and the set of organizations which attend the education system must seek in their teachers the leaders in the process of change.

- Educational software: We must equip schools with educational software, taking advantage where possible of the advantages of free software. One of the keys to success in the implantation of free software is the support for entrepreneurs who create value-added services for these programs: versions, maintenance and custom applications.

- Shared resources centers: Shared resources centers in Internet with online materials not only facilitate valuable didactic content which can be reutilized and/or adapted, but they should select, classify, quantify and give a stamp of approval in order to simplify the state of information saturation in which we find ourselves. Specialist support for the adequate use of resources, whether online or in person, multiplies their utility and efficiency.

- School twinnings: One of the possibilities which the ICT's offer is the creation of school networks in which students and teachers can communicate directly and carry out joint projects, giving rise to an authentic virtual educational community.

- Internet in schools: To be able to advance in the implantation of the ICT's, both in teaching and in the wider society, the first sep is to guarantee real, effective access in schools.

- Ongoing ICT training in organizations: Businesses are decentralizing an important part of their activity. As part of their ongoing training plans they can become agents of change in developing countries where they operate. The role they play in taking the IS to employees and families, through employee web portals, is also crucial.

- Institutional ICT training for the unemployed and groups with special necessities: If we want to attend the specific necessities of large groups of citizens who participate in adult education, always with the support of the structures of public and private intervention systems, ICT training must be included as an integral piece of the system.

The Debate is Still Open

The CMSI has activated the debate, the compiling of experiences and the negotiations of development plans for and with the IS. Multilateral intervention takes on a new protagonism which will gain special relevance in these two years of the Summit. Spanish participation will continue to be active, enthusiastic and practical. After the publication of this book, which acquaints people and organizations with the rich and complex reality of the Summit and its debates, and tries to put real faces on real experiences, we will continue to delve into in some of the themes related to e-inclusión and e-formación. The joint vision contributed by Spanish civil society and its private sector in these pages will join that of the Spanish administrations and will be enriched with social research on critical subjects. The CD with support documentation, and the website, www.desarrollosi.org leave the door open for the debate to continue.

Annexes

Annexes

Annex 1: Expert Collaborators

The following is a brief professional biography of the experts who have participated in the debate:

Ana Moreno

Ana Moreno is an industrial engineer, a graduate of the Universidad Politécnica de Madrid. The greater part of her professional trajectory, previous to the constitution of ENRED Consulting, was in IBM.

Since 1995 she is a managing partner of Enred Consulting (www.enred.es), and directs the Information Society section, which works principally with large public and private organizations, carrying out projects related to: e-work, e-business, e-services, e-training and others.

She is also a volunteer in the non-governmental organizations, Solidarity Classroom, (Aula de Solidaridad), an NGO principally concerned with education in matters of sustainable development: www.aulasolidaridad.org)

Ana Ortiz

Ana Ortiz is a graduate in computer science from the Universidad Complutense de Madrid and has taken a master's degree in radio broadcasting from the Spanish National Radio Broadcasting Company (Radio Nacional de España).

Her professional career has been largely dedicated to journalism, both written and in radio; teaching (teaching classes in journalism and publicity and images in the Universidad Complutense de Madrid); as well as in business, as a public relations consultant. Currently she is Director of Knowledge Management in AHCIET, the Hispanoamerican Association of Research Centres and Telecommunications Companies (Asociación Hispanoamericana de Centros de Investigación y Empresas de Telecomunicaciones).

Andrés González

Director of the Office of International Relations, of the Universidad Pontificia Comillas de Madrid.

Ángel Córdoba Díaz

Angel Córdoba Díaz graduated in business studies, with master's degrees both in digital communication and human resources, from the Universidad Complutense de Madrid.

General Subdirector of Caja Madrid and Managing Director of Human Resources of the Caja Madrid Group (leading Spanish financial institution with more than 300 years of history), Córdoba Díaz has worked in the financial sector since 1979, most of this time dedicated fundamentally to the management and development of people.

He is, furthermore, since October, 2000, Managing Director of the Internet at Home project and the ePersonas well portal, initiatives which have favored the use of Internet by employees of the Caja Madrid Group and their families.

Since 2001 he is also president of NetPersonas, a company dedicated to the development of an information society which permits equality of opportunities and the natural day-to-day incorporation of persons, above all families.

Antonio Jiménez

Sociologist and social anthropologist, Antonio Jiménez is a specialist in the analysis of social policies. He worked in the National Institute of Social Services, today the IMSERSO, where he directed the Service of Statistics and Socio-economic Studies and coordinated international cooperation programs, as well as in the Economic and Social Council, where he was director of the Secretary General's office.

Currently dedicated to social consulting, he collaborates with, among other institutions, the Spanish Committee of Representatives of Disabled Persons (CERMI) and the University of Salamanca. He directs the "Discapnet" website and is a member of the Commission of New Technologies and Information Society of CERMI.

Birgit Gocht

Birgit Gocht is a political science graduate from the Ludwig Maximilian University of Munich, Germany, complementing her academic formation with a master's degree in Macroeconomics and International Politics.

Her professional trayectory has been in the fields of journalism and public relations (DaimlerChrysler, Germany; NBC Europe, Sueddeutsche Zeitung, Germany, Transatlantic Business Dialogue/TABD, Brussels). She has been European coordinator of the Mercosur EU Business Forum (MEBF), in collaboration with BDI and Repsol YPF in Brussels. Currently she is Director of Institutional Development in AHCIET (Hispanoamerican Association of Research Centres and Telelcommunications Companies).

Carlos Mayordomo

Carlos Mayordomo Mayorga is a pedagogy graduate, currently Chief of the Open Formation Service of the National Center of Educative Information and Communication (CNICE), which pertains to the Ministry of Education, Culture and Sports. He is the person responsible for the Mentor Classroom project (Aula Mentor) since its beginnings. This project carries out its Internet-based training both in Spain and in Latin America, in collaboration with diverse institutions.

Throughout his professional life Mayordomo has been a primary school teacher and technical advisor for the evaluation and follow up of the ICT introduction programs in classrooms of the Spanish education system and in the processes of design and generation of materials, tools and strategies for online training.

Cecilia Castaño

Cecilia Castaño is full professor of Applied Economy at the Universidad Complutense de Madrid. Her research activity is centered on the analysis of technological change and

employment, as well as the problems of the incorporation of women into the workplace and the society at large.

Her latest publications include: *Technology, Employment and Work in Spain*, 1994; *Health, Money and Love. How Today's Spanish Women Live*, 1996; *Women in Metal: Employment, Qualification and Training*, 1998; *Difference or Discrimination: The Situation of Spanish Women in Work and the Information Technologies*, 1998.

Claudio Dondi

Claudio Dondi was born in Modena, Italy in 1958. He is a political science graduate, specialized in industrial economy. Dondi is the president, since its creation in 1988, of SCIENTER, a non-profit research center. SCINTER, with headquarters in Bologna and activity in all of Europe, deals with innovation in education and training systems. He is also president of SCIENTER SPAIN, an independent society created in 1999 with the participation of the parent organization. His principal activities in these posts are the coordination of national and European projects and as advisor on public policies at the regional, national and European levels.

His other posts of responsibility are: Professor of Human Resources Development at the College of Europe in Bruges, Belgium, Member of the Board of Directors of AEIE MENON (Brussels), member of the Editorial Council of the "British Journal of Educational Technology" and of the "European Journal of ODL", Vice President of EDEN -European Distance E-learning Network- and Vice President of EIFEL –European E-Learning Institute.

David Martín

David Martín is a technical specialist in the Spanish UNICEF Committee and coordinator of the "Get Hooked Up with UNICEF!" program, dedicated to the promotion of education for development among primary school students, with special attention to new technologies. Martín is a computer science graduate and has done a master's degree in educational television in the UCM. His academic and professional work, a variety of courses and research projects, has been centered on education communications issues, with emphasis on primary and secondary school students.

He has also worked as a trainer in courses and seminaries on these same subjects, and is a founding member of the "Aire" association, dedicated to promoting a critical and participative analysis of the mass media.

Eduardo Sánchez Jacob.

Eduardo Sánchez Jacob is an Industrial Engineer, a graduate of the Superior Technical School of Engineers of Valladolid and a Specialist in Development Cooperation of the Universidad Complutense de Madrid. Currently he works in the department of information and communications technologies of the NGO, Engineers Without Frontiers, and in the department of Studies and Campaigns of the Spanish NGO Coordinator.

Most of his professional trajectory has been related to development cooperation both in Spain and abroad. In Spain he was responsible for the Projects Office of Engineers Without Frontiers, and coordinated the "First Conference on Technology and Human Development." Internationally he has worked on reconstruction projects in Bosnia-Herzegovina, on development projects in Nicaragua and in the refugee resettlement program in Namibia for the Foundation of the Spanish Commission for Refugee Assistance.

Elena Acín

Elena Acín is a philosophy graduate and Doctor of Theology from the University of Navarra (1984-1989), and has an MBA from the IESE (1994-1996).

Her professional experience is the following: assistant in the anthropology department of the University of Navarra where she carried out various research projects centered on the philosophical analysis of human activity (1986-1994), four years working in Accenture (1996-2000) (developing projects related to strategy and organizational change in public entities and companies in various countries: Turkey, Spain ant the U.S.A.), three years as director of the Chandra Foundation (2000-present) (a non-profit institution which seeks to put new technologies at the service of social action.

During the three years of functioning of the Foundation we have launched three projects: www.canalsolidario.org (digital newspaper with social content), www.hacesfalta.org (web portal for volunteer programs), y www.solucionesong.org (web portal for sharing knowledge on social action subjects social).

Estefanía Chereguini

Estefanía is a Telecommunication Engineer, a graduate of the Polytechnical University of Madrid, and she is a member of the Broadcasting and Television Engineering Force of the General Public Administration.

She is currently a Technical Advisor in the Supporting Unit for the Directorate General for the Development of Information Society in the State Secretary of Telecommunications and Information Society of the Spanish Science and Technology Ministry. She is in charge of the international issues rrelated to Information Society.

She acts in the name of Spain in the Telecommunications and Information Society Group of the European Council, in order to prepare all issues related to Information Society for the European Council of Telecommunications and Transports Ministers. She also attends to european experts workshops about "Information Society and international issues" and "Information Society and Development". In addition, she represents Science and Technology Ministry in front of Interministerial Commission of International Cooperation.

She is also in charge of preparing issues related to Information Society in bilateral and multilateral ministerial meetings in the european environment as well as in the iberoamerican. Estefanía develops also cooperation activities with Iberoamerica in AECI Training Centers (AECI is the Spanish Agency For International Cooperation).

As a part of the participation of the Minsitry of Science and Technology in the WSIS, she has conducted all the works related to this publication.

Federico Mayor Zaragoza

Federico Mayor Zaragoza was born in Barcelona in 1934. Doctor en Pharmacy by the Universidad Complutense de Madrid (1958), in 1963 he was named Full Professor of Biochemistry in the Pharmacy Faculty of the University of Granada. In 1968 he became Rector of the University of Granada, a post which he held until 1972. The following year he was appointed to the full professorship of his specialty in the Autonomous University of Madrid. In 1974 he co-founded the Severo Ochoa Center for Molecular Biology, at the Autonomous University of Madrid and Spain's Superior Scientific Research Council (CSIC).

Among other political responsibilities, Professor Mayor has held positions as Spanish Subsecretary of Education and Science (1974-75), Member of the Spanish Parliament (1977-78), Advisor to the President of the Government (1977-78), Minister of Education and Science (1981-82) and Member of the European Parliament (1987). In 1978 he was appointed to the position of Assistant Director General of the UNESCO and, in 1987, was elected Director General of this organization, being re-elected for a second mandate in 1993. In 1999 he decided not to seek a third mandate and, returning to Spain, created the Foundation for Peace Culture, of which he is president.

Besides his numerous scientific publications, Professor Federico Mayor has published four books of poems: *Against the Wind (A contraviento*, 1985), *Etchings (Aguafuertes*, 1991), *Fire and Hope (El fuego y la esperanza*, 1996) and *Earth Wind (Terral*, 1997) as well as several books of essays: *The World Ahead: Our Future in the Making* (1999), *The Gordian Knots (Los nudos gordianos*, 1999) *Tomorrow is Always Too Late (Mañana siempre es tarde*, 1987), *The New Page (La nueva página*, 1994), *Memory of the Future (Memoria del futuro*, 1994), *Peace Tomorrow? (La paix demain?* 1995), *Science and Power* (1995) and *UNESCO: An Ideal In Action (UNESCO: un idéal en action*, 1996).

Francisco García

Director of the National Center for Educational Information and Communication, García is also President of Iberoamerican Educational Television.

Francisco Javier Barranco

Francisco Javier Barranco, graduated in physics from the Universidad Complutense de Madrid, and with a degree in Business Management and Marketing from ESIC, he also has a master's degree in Human Resources Management from the Business Institute (Instituto de Empresa).

His experience in Telefonica is the following:

- 1974 - 1977, Department of Economic Studies and Personnel Control
- 1978 - March 1982, Department of Marketing in the Computer Division
- March 1982 - May 1984, Director of Market Research in the Commercial Direction
- May 1984 – July 1997 the following posts in the area of human resources:
  - Section Chief in the Personnel Planning and Studies Service
  - Subdirector of the Studies and Social Methodology Services
  - Subdirector of the Organization and Structures Service
  - Subdirector of the Department of Personnel Selection
  - Director of the Organization Service
- July 1997 - October de 1999, Director of the Department of Economic-Administrative Management in the General Directorate of Institutional Relations
- October 1999, Director of Resources of the TELEFONICA FOUNDATION
- Since January 2000, Director, Social Projects Area in the TELEFONICA FOUNDATION

Frederic Cusí

Program Director of the Esplai Foundation.

Ismael Peña

Ismael Peña is a business graduate (Applied Economics and Internal Revenue) of the Autonomous University of Barcelona, as well as Master in Ecoaudits and Environmental Business Planning from the Institute of Ecological Research in Malaga. Peña is also a technician in Knowledge Management by the Open University of Catalonia.

He has worked in the field of academic management at the Autonomous University of Barcelona and the Open University of Catalonia, specializing in information and communications technologies (ICT) and the academic management of virtual training environments. Currently he is the manager of the Open University of Catalonia development cooperation program, Campus for Peace. ThE mission of this NGO is to facilitate the use of ICT by solidarity organizations and projects, especially in the internal management of NGO's and their training activities. The emphasis here is on the virtualization and online presentation of these activities and the promotion of online volunteer programs.

Peña is also the representative of the UOC in the Commission of Cooperation and Solidarity of the Ambiental Management Commission of the Joan Lluís Vives Institute, and has participated in diverse events and organisms, as well as publishing papers on development and volunteer programs.

Jesús Banegas

Jesús Banegas is President of the National Association of Electronic and Telecommunications Industries. (ANIEL)

Jorge Pérez

Jorge Pérez is a telecommunications engineer with a doctorate from the Polytechnical University of Madrid (UPM), a graduate, as well, in Political Science and Sociology of the Universidad Complutense de Madrid. Full professor of the Telecommunications ETSI of the UPM.

His research work in recent years has been related to three platforms of certain notariety in the telecommunications sector, of which he has been director: Information and Communications Technologies Group (Grupo de Tecnologías de la Información y las Comunicaciones) (GTIC-SSR-UPM), Telecommunications Regulations Group (Grupo de Regulación de las Telecomunicaciones) (GRETEL-COIT), and Telecommunications Forum (Foro de las Telecomunicaciones) (FOROTEL-COIT).

From June 1990 until February 1999 Pérez was Dean of the Official College of Telecommunications Engineers (COIT) and President of the Spanish Association of Telecommunications Engineers (AEIT). He was a member of the Advisory Council of Telecommunications and Information Society of the Ministry of Science and Technology and its Permanent Commission in representation of the Official College of Telecommunications Engineers, and he has worked as Assessor of the General Direction of the Empresarial Entity, RED.ES. Since 26th september 2003, he is the General Director for Development of Information Society in the SpanishMinistry of Science and Technology.

He has been independent advisor of the Board of Directors of the INFOGLOBAL company (1999). Currently he is independent advisor of the TTT company (2000-2002) and technical advisor of N-economy (CEPREDE) and of the IKUSI company. He is a member of the

Telecommunications Observatory of Expansión, the economic newspaper; and of the editorial council of TELOS magazine as well as of the technical advisory council of the magazine, Management and Progress (Dirección y Progreso) and member of the Management Committee of BIT magazine. Pérez is also founding member and vice president of the NGO Professionals in Solidarity (Solidarios Professionals) which is in the process of being merged with another NGO, CHANDRA.

José María Fernández Villalta

José María Fernández Villalta is a political science and sociology graduate of the Universidad Complutense de Madrid, specialized in social psychology. He is currently Assistant for Social Policies of the Confederation of CCOO, though most of his professional experience has been as in FUNDESCO and the TELEFONICA Foundation (1992-2000), as an expert in the areas of disabled issues and NGO's. He has also worked as an expert in telework and self employment projects and in the design and delivery of a master's program in telework for disabled graduates, as well as in the creation of telework-related content for an online training course.

Fernández Villalta is a collaborator of the Superior Council of Scientific Research (C.S.I.C), while remaining in contact with professionals and institutions in the fields of education, technology, society, etc. in Spain, Sweden, France and the U.K. He is also the founder and president of the University Association of Cerebral Paralytics and Similar Deficiencies (A.U.P.A.C.E) with participation in national and international forums and projects.

José Osuna

José Osuna is a systems and communications engineer, with a Marketing and Development degree from the University of Deusto. He also holds an Auditing Diploma in ISO 9000, CPQCV, and C.E.C.E., as well as Time Management.

Osuna is a trainer in official institutions in new technologies and their application: Labor and Social Affairs Council, Valencian Metal Federation, Spanish Confederation of Education Centers and the Polytechnique University of Valencia.

He has directed the implantation of management systems in private companies, of training development plans in rural environments, of implantation of information systems for schools, of development and refinement of eCommerce and eLearning platforms and of the creation of platforms for the management of telemedicine services for the elderly.

His publications include: "Systems Planning and Information Technologies" Polytechnical University of Valencia, "Implantation of New Technologies in Schools" for the Institute of Educational Techniques of the Spanish Confederation of Educational Centers (C.E.C.E.)

MªAngeles Sallé

She is currently the President of the Trust of the dircet Foundation, an organization engaged with promoting the quantitative and qualitative presence of women in professional careers and with changing the leading models and working organisation, in the sense of favouring new values and balance in the participation of men and women in the public area as in the private sector. In addition, she is member of the Spanish Women Entrepeneurs, Executuives and

Managers Federation (Federación Española de Directivas, Ejecutivas y Empresarias (FEDEPE)).

Manuel Acevedo

Coordinator of the e-volunteer unit of the United Nations Volunteer program in Bonn, Germany. An engineering graduate of the California Institute Technology and UC Berkeley, Acevedo's professional career has been in the field of cooperation, after joining the United Nations Development Program in 1994. He began as an environmental expert and was quick to note the tremendous possibilities of ICT in development work, particularly Internet. In 1998 he joined UNV and worked in the organization to advance their volunteer programs. This work took the form of applying ICT to expand the possibilities of volunteer programs (NetAid.org), as well as the promotion of schemes which permitted the volunteers themselves to help their colleagues to adopt ICT techniques for development (UNITeS).

Manuel Álvarez

Manuel Álvarez is an industrial engineer, specialized in Industrial Organization at the Superior Technical School of Industrial Engineers of the Polytechnical University of Madrid. He works as a consultant in the area of e-business and the information society, where he has collaborated in the design and technical supervision of projects related to electronic administration, e-formation, e-work and e-business.

In the field of cooperation, Álvarez has participated in the constitution of Energy Without Frontiers (Energía Sin Fronteras) and is a member of their Governing Board. Energy Without Frontiers is a foundation created for development cooperation, especially in matters of energy and water supplies, and on whose board of directors are found the principal Spanish energy firms. Álvarez is also a member of the Advisory Council of this same foundation and works actively in the area of Coordination of Volunteers. He is also director of the ICT area for development, created to foment networking and the application of ICT's both within the organization and with participants and colleagues in their projects.

Manuel Chaparro

Professor of the University of Malaga

Martín Grasso

Martín Grasso is a public accountant in the economics faculty of the University of Buenos Aires (Argentina), and has a master's degree in Business Management from the University of Palermo (Argentina).

His professional development has been in the field of auditing, working for Price Waterhouse Coopers in Argentina, and in various management posts in Telefonica of Argentina, including areas such as the Office of the President and the Direction of Institutional Relations. Currently Grasso is project director in AHCIET (the Hispanoamerican Association of Research Centres and Telecommunications Companies).

Mila Gascó

Mila Gascó is a doctor in public management. She is currently working as senior analyst in the International Institute of Governability in Barcelona where she is director of the area of Electronic Governance, field in which she is carrying out various activities related to public policies capable of permitting the transition to a new-age society. Her work has to do with the methodology for evaluating the degree of technological preparation of communities (e-readiness), as well as the design and implantation of electronic government programs (which include participation and electronic democracy) and ICT's for development.

Gascó is, as well, a professor of the Open University of Catalonia where she is coordinator of the research seminary in electronic governance of the doctoral program.

Silvia Arias Careaga

Silvia Arias Careaga is a doctor in biological science since 1998 (Autonomous University of Madrid - UAM). Currently she is director of the Office of Solidarity and Cooperation of the UAM. The Office's cooperation activities include their role as coordinator for the rest of Spanish universities of the agreement signed between UNITeS (United Nations Information Technology Service) and the UAM, which permits the participation of members of Spain's university community in projects which the United Nations carries out in various parts of the world. These projects are aimed at reducing existing inequalities in access to the opportunities offered by the digital revolution for lack of access, capacity and content. Arias also has wide experience in the planning and management of cooperation development projects, in the training of university volunteers and other workers and in the organization of volunteer programs. She has participated in several research projects on the functioning of Spanish university solidarity programs, as well as living several months in South America working in development, mainly gender-oriented cooperation projects. Arias also has wide experience in the field of biological anthropology research.

Valentín Villarroel

Valentín Villarroel Ortega is a telecommunications engineer, specialized in radio communication, from the Superior Technical School of Telecommunications Engineers of the Polytechnical University of Madrid. Villarroel has been involved with the world of cooperation for more than 10 years, in the development NGO, Engineers Without Frontiers (ISF). He has worked with ISF in the fields of project execution, evaluation of projects and studies, and formed part of their Board of Directors. Currently he works for ISF as coordinator of the Hispano-American Health Link program (Enlace Hispano-Americano de Salud - EHAS) which brings rural telemedicine to developing countries. He is also director of the Information and Communications Technologies area, where he coordinates development projects, studies, training courses, awareness campaigns and conferences. Villarroel also teaches undergraduate and post-graduate courses in the area of cooperation for development, technology for human development, evaluation of projects and ICT in development projects.

He is also a researcher in the Bioengineering and Telemedicine Group of the Polytechnical University of Madrid as a specialist in evaluation of telemedicine systems for developing conditions.

Yolanda Fernández Jurado

Yolanda Fernández Jurado is a doctor in economic and business sciences. Currently she is assistant professor in the Pontifical Comillas University of Madrid and coordinator of the Business and New Economy Group in the Organization and Systems Commission of the Madrid College of Economists.

In the Pontifical Comillas University of Madrid she has been, until January 2003, coordinator of the interdepartmental research group which deals with the effects of ICT on the economic and business environment and, since December 2002, is coordinator of the interfaculty research group on the situation and evolution of Europe at the outset of the twenty first century, where they take a multidisciplinary approach (legislative, technical, social and economic) to the principal issues which affect Europe, among them the consequences of the new environment created by the information society.

She is the author of research papers published in diverse publications and papers presented in congresses and workshops, both in Spain and abroad. Her activities are clearly related to the utility and consequences which the information society can have from a socio-economic point of view.

Annex 2: Bibliographic References

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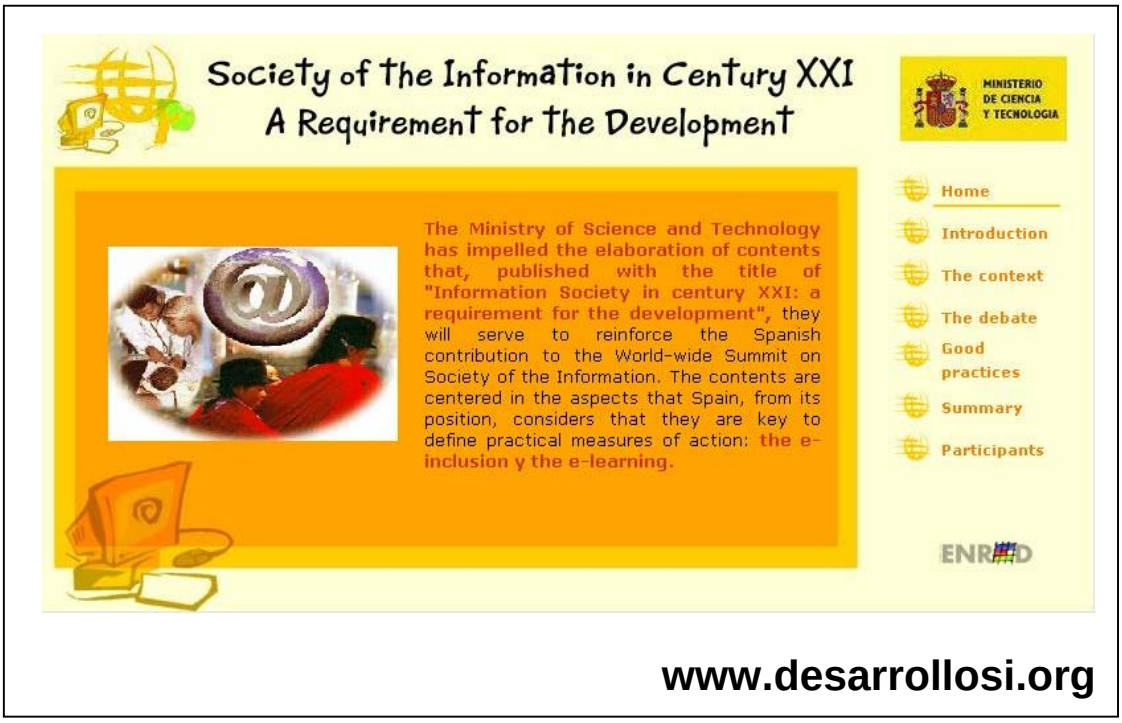
A debate to be continued…



In the website of this publication opinions related to Information Society and Development will be collected.