EUROPEAN PARLIAMENT

WORKING PAPER

Health and ICT in developing countries

PE 338.697

E U R O P E A N   P A R L I A M E N T

*DIRECTORATE-GENERAL FOR INTERNAL POLICIES
OF THE UNION*

WORKING PAPER

Study on
Health and ICT in developing countries

Scientific and Technological Options Assessment Series

_____*STOA 122 EN* _____

02-2004

This study was requested by the European Parliament's Committee on Development and Cooperation within the STOA Workplan 2002.

This paper is published in English only.

Authors: Consultores Euroamercianos Asociados
Spain

PE 338.697

table of contents

PE 338.697

INTRODUCTION

In the last decades, technological advances are producing deep changes in the organization of work, governance, and social life. The economic and social disruptions that inevitably characterize rapid change are challenging governments, as their citizens' call for action to offset or ease the pains of adjustment. However, these advances are moving faster than the ability of governments and big organizations to address and cope with their consequences.

Accelerated technology change is transforming what is traded around the world. It is transforming the location of economic activity. It is transforming the fundamental institutional structures underlying global commerce and investment. But most important, it is speeding up the structural changes that result from globalization of markets. This affects the health sector too.

The most powerful of the emerging technological changes is the information revolution. Rapid advances in computing and telecommunications are revolutionizing the functioning and even the structure of virtually all industries. Healthcare is also under the effect of this revolutionary change. Process and product technologies are becoming instantly transferable through global data telecommunication networks, such as the Internet, widening dramatically the potential suppliers of goods and services in the world marketplace. These developments sharply reduce the significance of geographic distance and dramatically shorten the response time needed to establish relationships between users and providers. Goods suppliers (i.e. medical equipment, pharmaceuticals, etc) increasingly are able to provide accompanying support services, enabling much closer and more interactive producer-consumer relationships. In this way the traditional intermediary procurement and local servicing chain is being changed.

The results of the study should lead to a better understanding of the main technological factors influencing the healthcare environments in the developing countries and also the identification of actions to put in hand to encourage wider use of the healthcare ICT to improve health conditions and delivery.

The developing countries that have gained the most from integrating into the world economy have shown impressive gains in primary education and infant mortality. This suggests that many countries have made investments in education and health services that enable the poor to benefit from growth.

The Information and Communication Technologies development may be seen as the main reason of the globalisation of the economy and, what it is more important, the achievements of this development remains today undisclosed. The information society is profoundly changing everyday life, promoting new forms of urban and rural development and improving the quality of the education and health systems.

Therefore, in the future, the major challenges for countries in transition and developing countries will be to participate in the expansion of a truly global information society. The information society has the potential to improve the quality of social and personal life at all levels. In this context health and education are of major societal impact for the citizens of any country and especially to those in living conditions below the thresholds of poverty.

Nowadays we are witnessing a unique opportunity for developing countries for catching up with the Information Age and, through the use of ICT, to reduce the gap and provide healthcare to its citizens in a way that traditional solutions will never do. High quality of care is the only valuable output of any health care delivery system.

But globalisation is not the only driving force of the last decade; localisation is another force as powerful, and the tension between them was recognised by the World Bank in its 1999-2000 "World Development Report". The renowned economic body singled out those dynamics as two of the most important forces shaping economic development, and at the same time noted the competitive nature of the two as well as the need of equilibrium and balance.

Any action aiming at improving health conditions in developing countries, must take into account the need to respond to both forces, and although global solutions may be valid, the local requirements and constraints must be present and respected in projects and cooperation programmes.

A. OPTIONS

Policy options are mainly designed for the Committee on Development and Cooperation (DEVE) of the European Parliament and other European Union Institutional Policy-makers. Policy options are structured according to several possible action lines and work items that can be differentiated and tackled so to say independently. Nevertheless the spirit of the study and the recommendations are calling for a joint effort and approach to maximize the results.

A.1 RECOMMENDATIONS ON:

A.1.1 Technology innovation for healthcare

- Regarding ICT and health it is often expressed a false dichotomy: vaccines versus ICT. It is a demagogic position. It is a fact that some technologies can help where traditional solutions have never succeeded: i.e. when it is needed a direct presence or access to knowledge sources. It is better to have a qualified assistant nurse empowered by ICT tools in a remote area than wait for ever for a doctor that never arrives. Development plans should overcome traditional concepts of health cooperation and assume some risky positions including adequate use of ICT tools.

- There is a need to reach critical mass and overcome single and simple pilot projects. There are lots of success stories that can contribute to best practices dissemination. Current development plans should include wide implementation and not merely local and pilot projects.

- The critical factors to evaluate and assess best practices should answer to the question: Are they replicable, transportable or transferable and scalable?

- E-learning and ICT for education is an enabler for capacity building in health therefore it should be considered as a part of any development plan.

- There is a critical need to examine and enhance the organizational practices which are used to introduce, integrate and institutionalize ICT for health applications. Experience shows that the potential benefits of ICT will only be realized if the assimilation process is properly managed.

A.1.2 New Healthcare services in developing countries

- Bearing in mind that the threat the advanced economies have to face in the next years will be to integrate, promote and enhance the innovation activity in the whole areas of the economy, the innovation concept should be understood from a systemic point of view, in which innovation arises from complex interactions between individuals, organizations and their operating environment. The analysis and study of the relationships that come into play at the new health environments is essential for designing, developing and implementing an innovative enterprise culture and new models for cooperation for sustainable development with the developing countries.

A.1.3 Health cooperation programmes

- It should be considered to improve co-ordination within and between developed countries and multilateral organisations, by creating a suitable forum for discussion and exchange. An example of this kind of experience is the Information and Communication Technology for Development Forum, held at the OECD Paris (4-5 March 2003) and the World Summits on the Information Society the first one held in Geneva (December 2003) and the second phase to be celebrated in Tunis [1] (November 2005). They are widely referred to in the adequate topics.

- To guarantee the success of the health cooperation policies, it is recommended:

  - To persist with donor's co-operation policy alignment around developing countries' Poverty Reduction Strategy Programmes (PRSPs).

  - To clearly specify the strategies and actions on ICTs applied to Health.

  - To foster actions aiming to improve citizens' access to health care services.

  - To promote policies encouraging knowledge sharing networks as a suitable tool to improve professionals' training and the quality of health service delivery.

  - To relay on local sound counterparts able to sustain and maintain programmes further than pilot project's end.

  - Programmes should be technically leaded by independent experts not conditioned by commercial interest or political biass.

- It is necessary to design and use different and suitable ICT tools for different types of cooperation programmes. ICT for health requires the appropriate instrument, depending on the nature of the projects: i.e. implementation or research and development projects require differentiate approaches.

A.1.4 Public health issues and ICT

- The improvement of public health services can be achieved by acting on how the healthcare services using ICT development could introduce continuous enhancement in its delivery model addressing the basic questions of accessibility and equality. Any development plan including ICT should be based on a thoroughly understanding and respect of these issues.

- The adoption and use of ICT and how the healthcare sector in the developing countries will apply, adapt, adopt, and utilise technology instruments, equipment facilities and methods, particularly how healthcare organisations will utilise technology to become more efficient and render a better service, is a crucial question to be addressed in all development cooperation programmes involving ICT for health.

---

[1] http://www.itu.int/wsis/

- The recent development of the Severe Acute Respiratory Syndrome (SARS) obliges to establish co-operation for the close control of newly appearing public health threats that, given the globalisation are a potential threat for all humanity. The use of ICT, allowing alerts and massive diffusion almost instantly, helps to give rapid and efficient responses or even provide tools for spreading knowledge or research co-operation overcoming social barriers or geographical borders. It should be encouraged the adoption of specific cooperation projects on this issue.

- Patients are an integral part of the process of change, together with clinicians in health-care systems and information technologies industries, and therefore they must be active participants in the move towards e-Health oriented healthcare systems. The lessons learnt from the HIV/AIDS experience confirm this fact. User demands should be crucial in shaping the new services and therefore should be present in any cooperation for development plan.

- The ageing of the population and the increase in chronic illnesses is growing dramatically in the developing countries, normally faster than in the developed world but with fewer possibilities to deal with the problems that are generated. Pilot cooperation programmes should be designed and implemented to tackle this new condition.

A.1.5 Regulations and legal framework

- Regulatory and legal issues are an integral part of the success of massive deployment of ICT tools within healthcare. All healthcare developing cooperation programmes should tackle in a proper manner these issues. Success stories are typically described in countries where the authorities took a proactive position and the adaptation of the legal framework was encompassed with the introduction of ICT.

- The use of new ICT based tools raises new questions of legal and regulatory nature normally not considered in the planning of the projects. Being a crucial factor for long term sustainability they should be adequately address in the planning phase.

- When planning multinational and cross border use of ICT tools to support healthcare provision or public health issues suitable considerations should be made to the regulatory and legal aspects.

- The data relating to the health of the persons are highly sensitive and thus, in the regulation and legal aspects should be emphasized the exclusive use of these data for the purpose that were obtained. It should be protected especially the right to the intimacy of the citizens and to the confidentiality of their data relating to health.

A.1.6 ICT infrastructures

- ICT Infrastructures are a fundamental prerequisite to contribute to the creation of basic communication networks in low-income countries. Therefore to make possible the later introduction of appropriate ICTs, it is recommended to include this requirement in any generic cooperation for development programmes related to health.

- Information and communication infrastructure constitutes one of the basic pillars for allowing the deployment of ICT for health specific programmes. In this context mention to connectivity for healthcare institutions and professionals should be included in the national e-strategies. The donor community should raise awareness about the importance of this condition for the further implementation of telemedicine and telehealth.

- The use of the new wireless technologies (WI-FI) should be deeply explored in all new cooperation for development programmes including ICT for health.

- Many inhabitants in developing countries either can not afford individual Internet service or do not have easy access. Initiatives tending to overcome this problem through installation of Internet terminals in public locations (telecentres, schools, municipalities, research centres), as well as in cybercafes, should be encouraged.

A.1.7 Standardisation and Interoperability

- It should be encouraged by all means the use of standardized technology, medical devices and ICT appliances to allow interoperability, less expensive technology transfer mechanisms, the deployment of existing well proved European solutions and to reduce the cost for maintenance and replacement. Special attention should be paid to basic local physical and electrical infrastructures. The cooperation for development plans addressing ICT for health should include a clear statement on the use of existing international standards.

A.1.8 Technology transfer mechanisms and policies

- It should be encouraged at strategic level:

  - The Education and Training of high level healthcare managers and policy makers on the strategic role of ICT in Healthcare and change management.
  - To implement programmes on education and training, and other actions to promote awareness and to reduce resistance to change of healthcare professionals.
  - To improve procurement process and train people, facilitate guidelines as well as advise on best practices about health ICT systems procurement.
  - To set up specific awareness actions addressing sensitive groups, such as: academic circles, high reputation specialists at university hospitals and other local medical opinion leaders, clinical research groups, medicine and nursing students.
  - To improve mutual learning for the transferring part too, particularly to avoid cultural mismatches.

  - Concerning technology issues the following recommendations should be considered:

    - To develop healthcare networks by the means of supporting the deployment of telecommunication facilities and data network infrastructure in healthcare institutions.
    - To support measures to facilitate professionals' access to Internet.
    - The adoption of standards and guidelines on health ICT infrastructures, components and data contents.

- To pay special attention to the applications supported by wireless technology.
- To facilitate the setting up of open source and free software policies.
- To develop technical force and capacity building for maintenance and local daily operation of ICT systems.
- To consider local working conditions for hardware equipment, such as humidity, temperature, dust, and handling.

A.1.9 Cooperation for development action plans

- The cooperation for development policy should address the definition of sustainability for development including social goals and not only economical goals.

- ICT should be an integral part of any development policy as "critical enabler for development" as it is mentioned by the DOT Force.

- It is necessary to develop and promote plans to raise awareness of the need to include ICT within sectorial cooperation strategies namely health cooperation programmes.

- Attention should be paid to the growing number of disabled population in the developing countries. Their health needs should be necessarily included in all cooperation for development programmes.

- A special emphasis should be done on gender-related issues and ICT for health implementation plans in developing countries. A new risk for increasing inequalities in a world suffering from the "digital divide" should be strongly avoided.

A.2 CONCLUSIONS

- ICT is not yet considered a key element when addressing health cooperation programmes. Most health strategic documents, including some produced by the European Commission (EC) and the European Parliament (EP) do not mention ICT as an important mean to promote health and fight better against disease in Developing Countries.

- Co-operation policies on ICT and Health, both from donors and multilateral organisations, are scarcely defined and not very explicit. Due to this situation, it just can be presumed that the policies and strategies defined for each field are implemented when both interact, in most cases in an unplanned aleatory manner.

- Co-ordination within and between donors and multilateral organisations is deficient, appearing "multi-responsibility" issues where no joint action exists. In addition, donor policies do not always fit in with developing countries (DC) needs and expressed interests, although these are clearly detailed in each country PRSPs. However, important advances have been carried out on this issue, especially thanks to Millennium Development Goal (MDG) definition and the support of key international organisations (United Nations (UN), OECD, European Union and the World Bank). The non presence of ICT for health policies within the DC strategic papers should not imply that the donor countries and organisations must ignore them.

- On the other hand, Communication Technologies needed in DC not always belong to high level sophisticated ones. This implies sequencing the set of co-operation measures giving priority to the extension and reinforcement of basic telecommunication networks (telephone and radio), in order to tackle, amongst other problems, the lack of communication between rural village and urban areas and diminish the existing inequalities.

- It remains unclear the presence of UN Millennium Development Goals 4, 5 and 6, that state the strategies on Health and ICT, in the EU development for cooperation programmes mainly directed to improve training, information and access to knowledge and services sources. The same deficiency can be appreciated in goal number 8 concerning essential drugs in developing countries.

- Regarding ICT for health programmes, there is a clear discrepancy between the policy statements about the need for coordination between different DGs of the EC, in charge of cooperation for development, and the real inter-relation and coordination either in the definition of the policies, the execution and the follow up of the programmes. Most of the real coordination effort is done on voluntary and personal basis rather than institutional ones. There is evident room for improvement of the coordination between DG DEV, DG RELEX, DG INFSO and AIDCO. More links should also be established for the coordination between efforts at national level and EU level regarding cooperation for development plans involving health.

B.   ARGUMENTS AND EVIDENCE

B.1   ICT and Health

B.1.1   Current Status and trends

Healthcare organizations are themselves being restructured in most countries. It is generally accepted the importance of using ICT to improve efficiency and to save costs. Certainly, ICTs are at the base of the strategies to manage the change of the healthcare sector in advanced countries. The World Health Organisation (WHO) has also made calls to extend new technologies applications to developing countries.

The key words for the health services for the years to come will, among others, be: accessibility, quality, safety and efficiency. The challenge to the employees at all levels of the health services will be the implementation of clinical knowledge, integration of research evidence, creation of the organisation framework for continuous development, standardisation of suitable areas, inclusion of the preventive aspect, and cross-sectorial and professional thinking. Information technology is a useful tool in the endeavours to meet the challenges in the health services.

B.1.2   Health goals and challenges

Information and Communication Technologies (ICTs) applied to health became a horizontal axis that decisively contribute or may contribute to improve the living conditions of Developing Countries' citizens (DC).

As OECD Development Co-operation Directorate (OECD-DCD) mentions in its report **Donor Information and Communication Technology (ICT) Strategies** [2] "Most donors recognise that ICT is a powerful force in shaping the social and economic development of society and that, in an increasingly networked world, ICT constitutes essential tools for human development."

On the whole, policies contributing to development, both from governments and international organisations, formerly follow the UN Millennium Development Goals (MDG)[3], especially those related to poverty and hunger eradication, three of which are directly related to health.

---

[2] Donor Information and Communication Technology (ICT) Strategies. Summary Matrix. Information Collected by the OECD Developments Co-operating Directorate (DCD) as of February 2003. http://www.oecd.org/dataoecd/53/55/2499900.pdf
[3] http://www.un.org/millenniumgoals/index.shtml

Eradicate extreme poverty and hunger	• Reduce by half the proportion of people living on less than a dollar a day • Reduce by half the proportion of people who suffer from hunger
Achieve universal primary education	• Ensure that all boys and girls complete a full course of primary schooling
Promote gender equality and empower women	• Eliminate gender disparity in primary and secondary education preferably by 2005 and at all levels by 2015
Reduce child mortality	• Reduce by two thirds the mortality rate among children under five
Improve maternal health	• Reduce by three quarters the maternal mortality ratio
Combat HIV/AIDS, malaria and other diseases	• Halt and begin to reverse the spread of HIV/AIDS • Halt and begin to reverse the incidence of malaria and other major diseases
Ensure environmental sustainability	• Integrate the principles of sustainable development into country policies and programmes; reverse loss of environmental resources • Reduce by half the proportion of people without sustainable access to safe drinking water • Achieve significant improvement in lives of at least 100 million slum dwellers, by 2020
Develop a global partnership for development	• Develop further an open trading and financial system that is rule-based, predictable and non-discriminatory. Includes a commitment to good governance, development and poverty reduction—nationally and internationally • Address the least developed countries' special needs. This includes tariff- and quota-free access for their exports; enhanced debt relief for heavily indebted poor countries; cancellation of official bilateral debt; and more generous official development assistance for countries committed to poverty reduction • Address the special needs of landlocked and small island developing States • Deal comprehensively with developing countries' debt problems through national and international measures to make debt sustainable in the long term • In cooperation with the developing countries, develop decent and productive work for youth • In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries • In cooperation with the private sector, make available the benefits of new technologies—especially information and communications technologies

ICT may provide key components to achieve the above mentioned goals by improving the access to health services and the information flow between citizens and professionals as well as giving new alternatives to solve health troubles when and where they arise (the right solution at the right time).

THE POLICIES

The following OECD's modified table shows the role that ICT can play in MDG's achievement. Regarding health, these topics are focused on improving training, information and access to knowledge and services' sources.

Goals	Role of ICT
Goal 1:	
▪ **Eradicate extreme poverty and hunger**	▪ Increase access to market information and lower transaction costs for poor farmers and traders;
	▪ Increase efficiency, competitiveness and market access of developing country firms;
	▪ Enhance ability of developing countries to participate in global economy and to exploit comparative advantage in factor costs (particularly skilled labour).
Goals 2 and 3:	
▪ **Achieve universal primary education** ▪ **Promote gender equality and empower women**	▪ Increase supply of trained teachers through ICT-enhanced and distance training of teachers and networks that link teachers to their colleagues;
	▪ Improve the efficiency and effectiveness of education ministries and related bodies through strategic application of technologies and ICT-enabled skill development;
	▪Broaden availability of quality educational materials/resources through ICTs;
	▪ Deliver educational and literacy programmes specifically targeted to poor girls & women using appropriate technologies;
	▪ Influence public opinion on gender equality through information/ communication programmes using a range of ICTs
Goals 4, 5, 6:	
▪ **Reduce child mortality** ▪ **Improve maternal health** ▪ **Combat HIV/AIDS, malaria and other diseases**	▪ Enhance delivery of basic and in-service training for health workers;
	▪ Increase monitoring and information-sharing on disease and famine;
	▪ Increase access of rural care-givers to specialist support and remote diagnosis;
	▪ Increase access to reproductive health information, including information on AIDS prevention, through locally-appropriate content in local languages.
Goal 7:	
▪ **Ensure environmental sustainability**	▪Remote sensing technologies and communications networks permit more effective monitoring, resource management, mitigation of environmental risks;
	▪ Increase access to/awareness of sustainable development strategies, in areas such as agriculture, sanitation and water management, mining, etc.;
	▪ Greater transparency and monitoring of environmental abuses/ enforcement of environmental regulations;
	▪ Facilitate knowledge exchange and networking among policy makers, practitioners and advocacy groups.
Goal 8:	
▪ **Develop a global partnership for development**	
• **Address the special needs of the least developed countries (LDCs)** • **Address the special needs of landlocked countries and small island developing states**	▪ Enable LDCs, landlocked countries and small islands to link up with the global market to accelerate their progression and full integration into the world economy.
• **In co-operation with developing countries, develop and implement strategies for decent and productive work for youth**	▪ Distance working facilitated by ICT opens up opportunities to create service-sector jobs in developing countries in such industries as call centres, data entry and processing, and software development;
	▪ Telecentres do not only provide access to telecommunications, they also create direct employment for men and women;
	▪ Improve youth learning skills, employability to meet the challenges of the knowledge-based global economy of the21st century.
• **In co-operation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries**	▪ Provide online drugs databases.

Goal 8:	
• **In co-operation with the private sector, make available the benefits of new technologies especially information and communications**	▪ Combine low and high technology to achieve relative ubiquity of access to effective and affordable information and communication technology tools;
	▪ Promote digital literacy through e-learning;
	▪ Develop a critical mass of knowledge workers with the technical capabilities to provide and maintain ICT infrastructure.
Source: adapted from United Kingdom Department for International Development (DFID), *The significance of information and communication technologies for reducing poverty*, January 2002.	

The technological revolution that healthcare organizations are now undergoing is not limited to the information revolution. It includes many other developments and advances in biotechnology and life sciences but also in many other technical and scientific areas like materials, optics, nanomechanics, etc. All these developments are increasingly interactive, and are cumulatively having the effect of accelerating the pace of health technologies change generally. This acceleration of change brings about a compression of time for decision makers and the risk of widening the gap between developed and developing countries.

Institutional and political processes of decision making in healthcare are generally long in time. Time is even longer when considering developing countries subjected to hard economic constrains.

Policy changes take a long time, while political consensus is developed. Government-to-government negotiations normally take years. There are inveterate tendencies in most health institutions and political processes to slow things down, to retard the pace of change through measures that shield traditional structures from the forces of change. This context is contradictory with the change rate of ICT driven knowledge society.

ICT are shortening the time and resources required to produce new services and it is shortening the time lag in international diffusion of technology. One of the consequences is faster products obsolescence. As the market life cycle of many healthcare ICT applications shortens, there is a growing need for faster responses and faster adaptation. Time is becoming a critical factor for everybody but especially for developing countries. They must face the dramatic need of overcoming the growing gap suffered by the delay in adopting new technologies. To save the gap they should jump over several technology generations but that means investments in new, usually more expensive, technology and people skills.

B.1.3   Telemedicine and telehealth

ICT applications in healthcare, like electronic health records (EHRs), Hospital Information Systems (HIS), laboratory automation, diagnostic images systems (PACS), etc., are changing the way health services are provided in clinics and hospitals settings. Furthermore telemedicine and telehealth systems are actually demonstrating the capability to supply healthcare services or health advice remotely, independent of the geographical distance. This represents a radical departure of the traditional structure of health services based on face to face encounter and the dependence on local resources, knowledge and skills.

All above means revolutionary changes in the health industry sector that is being open to global interactions and new business initiatives. Rapid advances in global telecommunications can accelerate and amplify this tendency, fundamentally changing the way in which citizens and professionals will access information and knowledge.

There are many examples of telemedicine services offered by organizations rooted in USA and Europe aiming to developing countries markets. On the other hand there are also reported cases of health care organisations hiring tele-expertise of specialists in developing countries because of lower costs.

Multinational co-operation is increasingly working on improving access to technologies and expanding Internet possibilities in all domains. International co-operation between different medical groups is very important in the promotion of telemedicine and also in the evolution of the scientific research. Social investment and projects promoted by Telecom companies also are paying special attention to healthcare and education programmes.

B.2 The specific needs of low-income countries and communities

According to the World Health Report 2002 there are "top ten" risks to human health in the world, that account for more than one-third of all deaths worldwide. This is especially relevant for low income countries and societies.

As for the developing countries, the main risks are reduced to six:

- Underweight
- Unsafe water
- Poor sanitation and hygiene
- Unsafe sex
- Iron deficiency
- Indoor smoke from solid fuels

We review all the six main risks under a public health perspective. Many health cooperation programmes address these topics and in some cases ICT is present as a tool in the projects. Scarcely ICT is a central component of the programmes although it could improve in a very important manner the outcomes and results. ICT is principally used for education related tasks and capacity building mainly for AIDS and sex behaviour.

"Underweight alone accounts for over three million childhood deaths a year in developing countries. WHO estimates that underweight caused 3.4 million deaths in 2000, including about 1.8 million in Africa and 1.2 million in Asia. It was a contributing factor in 60% of all child deaths in developing countries"[4].

"The second most important risk factor is unsafe sex, the main factor in the spread of HIV/AIDS, with a major impact in the poor countries of Africa and Asia. The HIV/AIDS is the world's fourth biggest cause of death. Currently 28 million (70%) of the 40 million people with HIV infection are concentred in Africa. The rate of development of new cases is highest in Eastern Europe and central Asia. Life expectancy at birth in Sub-Saharan Africa is

---

[4] World Health Report 2002

currently estimated at 47 years, without AIDS it would be around 62 years. Current estimates suggest that more than 99% of the HIV infections prevalent in Africa in 2001 are attributable to unsafe sex; in the rest of the world range from 13% in East Asia and the Pacific to 94% in Central America. Globally, about 2.9 million deaths are attributable to unsafe sex, most of them occurring in Africa".

"About 1.7 million deaths a year worldwide are attributed to unsafe water, sanitation and hygiene. One out of ten deaths is in children and virtually all of deaths are in developing countries".

"Iron deficiency is one of the most prevalent nutrient deficiencies in the world, affecting an estimated two billion people and causing almost a million deaths a year".

"Half of the world's population is exposed to indoor air pollution, mainly the result of burning solid fuels for cooking and heating. Globally, it is estimated to cause 36% of all lower respiratory infections and 22% of chronic obstructive pulmonary disease".

As mentioned the UNFPA in the State of World Population 2003: "Currently the world is facing the largest generation of adolescents in history, 1.2 billion. Nearly half of all people are under the age of 25. About 20% are adolescents and 87% of these adolescents live in developing countries. The State of World Population 2003 report from UNFPA, the United Nations Population Found, examines the challenges and the risks they face. Young people face varied and changing political, economic, social and cultural realities. Within the framework of human rights established and accepted by the global community, certain rights are particularly relevant to youth, including gender and the rights to Education and Health. An estimated 238 million youth, almost one in four, face the constraints of extreme poverty. More than 13 million children under age 15 have lost one or both parents to AIDS".

Illiteracy is a scar among youth. "57 million young men and 96 million young women aged 15-24 in developing countries cannot access to read or write. However, in all regions women are gaining access to literacy and education, and at a faster rate than men. About 90 countries are on track to meet global goals for ending gender inequality in primary education by 2015".

The HIV/AIDS pandemic is a serious risk for youth. "A youth is infected with HIV every 14 seconds, and youth (increasingly women) account nearly half of the new cases of HIV infection worldwide". Information about sexuality among youth plays a key role for HIV prevention and care. Young women have additional risks in developing countries due to several factors, such as, early marriage, "biologically women's risk of infection during unprotected sexual relations is two to four times that of men".

Investments in health and education are crucial for combating HIV/AIDS pandemic. It is estimated that the economic benefit of a single averted HIV/AIDS infection is $34,600 for a poor country with annual per capita earnings of $1,000 per year.

Since the basic needs in education and health care for developing countries are not covered, the investment in ICT creates a dilemma and a false dichotomy. It is thought that "excessive" investments in ICT could go to the detriment of the education or direct health investments. No investments in ICT will widen the existing digital divide and avoid the advantage of innovative solutions to solve existing old problems. Therefore, there should be a balance among investments in both areas because without a population with enough levels, not only

of literacy but also of primary education and skills, the advance and spread of ICT is not possible nor the adequate deployment of ICT new tools.

Nevertheless, investments in ICT in low income countries have important constraints mainly due to the public access to new technology in terms of infrastructures, costs and lack of skills of the population.

Investments on ICT in low income countries have clear benefits for the health sector. Directly it improves health care provision and disease prevention. In this sense several best practises could be mentioned such as the ones in India:

- *"India Healthcare Project:* (Government of India, Apple computers & CMC) Region: Rajasthan.
  The project combined the use of Personal Digital Assistant and support tools in order to reduce the time auxiliary nurse midwives (ANMs) spent doing paperwork, increase the accuracy of the data collated and supplied by ANMs, ensure the availability of village level health care data in an electronic form and provide ANMs with information that would help them to improve the effectiveness of the services".
- *"Maharashtra Emergency Earthquake Rehabilitation Project:* (World Bank, British Government and UNDP) Region: Maharashtra.
  The Aim is to minimize the adverse effects of natural disasters. The project includes a disaster management centre, computerized control rooms across the state, a VSAT and VSF based communications network and area-specific, geographical information system (GIS)-based disaster management plans. The system provides critical support to the disaster management functions of the administration. It is designed to help planning exit and evacuation activities, locate resources that could be easily deployed in the affected areas, identify potential disaster management facilities where needed and help access to international medical and managerial support".
- *"The computerization of the Mandal Revenue Offices in the State of Andhra Pradesh.* (World Bank, Hazard Mitigation and Emergency Cyclone Recovery Project).
  A total of 1225 offices, the office of the Commissioner of Land Revenue and the Directorate of Economics and Statistics at Hyderabad are to be computerized. This involves data collection, development and implementation of appropriate data-bases and developing human resources through intensive training. The system uses a 2MBPS optical fibre link to connect the Andhra Pardesh State secretariat with 23 district headquarters. This also helps public authorities control effects of epidemics in post-cyclone and post-flood situations".
- *"Wired Village Project.* (Central, state and local governments) Region:Warana Nagar in the Kolhapur and Sangli district of Maharashtra.
  It was designed as a pilot project that would demonstrate the contribution an IT infrastructure can make to the socio-economic development of a cluster of 70 contiguous villages It aimed to provide villagers with agricultural, medical and educational information at facilitation booths in their villages, as well as access to Internet via the National Informatics Centre Network. It also aimed to make distance education facilities available to both primary and higher educational institutes. The project is making a positive difference in terms of more informed use of facilities at village level primary health centres and a greater awareness among farmers of the implications of cropping practices".

B.3   Health in developing countries*: barriers and driving forces

B.3.1   Gaps and opportunities for Health care models in Developing Countries

Developing countries are facing a big health crisis with millions of people dying each year from basic health care deficiencies. Major threats to public health stem from a shortage of health professionals, inadequate health education, and out of date clinical treatment. Lack of access to accurate and timely health information is an important contributory factor. The social and economic burden of disease in the developing world is further worsened by the close link between health and economic development.

Information and communication technologies have the potential to help improve the delivery of information and services to the healthcare community and to end-users in developing countries. ICT cannot solve the global health care crisis single-handedly, but tele-diagnosis, distance learning, practitioner and citizen information networks, and other applications offer powerful tools to overcome some of the shortcomings and weaknesses caused by breakdowns in information-sharing, learning and management - crucial factors for a well-functioning health care system.

In considering the role of ICT in the area of health, there are many issues deserving consideration. According with the Information Technologies Group (ITG) at the Center for International Development (CID) of the Harvard University, some of them are the following:

"How much of a priority should ICT be within health care planning, when many health care systems lack funds for basic medicine, health care facilities and personnel?
What is the relative value of up-to-date health information in an under-funded health system?
What are the technical challenges to use ICT to provide accurate and timely health information to the developing world?
Are ICT efficient means of improving public understanding of health and wellness when infrastructure, literacy and other factors limit effective access to ICT?
Can ICT be used appropriately to train health professionals?
How can we understand the readiness of a developing country to effectively implement technology solutions within its health care system?
What are the major challenges to establishing sustainable models (financial, administrative, training, etc.) of health services provision using ICT in developing countries?"

B.3.2 Key issues: driving forces and barriers

Driving forces

There are a number of driving forces that can influence the deployment of ICT within the health domain that, in summary, are the following:

- Technological momentum: the availability of the technology as well as the telecommunications price reduction.
  In many developing countries this is not yet the case, especially for the reduction of telecommunication cost due to the monopolistic situation of the providers. Nevertheless the joint approach in the development plans will push real price reduction in the short term. Even from the donors point of view it can be afforded the provision of adequate bandwidth for the specific health applications.
- Economical drive: we can have two different approaches with a similar outcome, the pure cost containment one based on theoretical savings derived of the appropriate use of ICT, and a more rationalistic approach based on the improvement of the efficiency and the level of services.
  In most of the developing countries due to the low budgetary support to healthcare the economical drive is only a relative driving force. The possibility of improving service level with the same expenditure can be an attractive condition for many governments to include basic ICT within health plans.
- Social push: ICT can help to provide some type of services, namely those related to education, prevention, follow up, screening, etc, in remote areas and conditions, which will be accepted by the population when they do not have by other means any chance to access them. Accessibility and equity are the key words to impulse the use of ICT from a social point of view in developing countries.

- Quality: Other driving forces are directly related to the healthcare delivery and its enhancement through the use of ICT in the process of care. Most of the benefits are associated with the availability of information and the diminishing of the bureaucratic costs as well as the improvement of the healthcare management and policies. Early and rapid alarms in case of risk and threat circumstances for public health can be dramatically improved by the use of ICT in addition to the monitoring of sanitation conditions.

Barriers

The barriers related to the use of ICT are not specific for the healthcare domain; even in many cases the regular use of other technological devices by health professionals makes it easy the introduction of new elements. However the change of techniques, the need to review the processes of care, the scarce number of professionals that are skilled in the use of ICT, not enough professional rewards, linguistics barriers, etc, constitute a real burden in the execution of ICT related plans.
The specific barriers correlated with health are mainly based on:
- Security, confidentiality, ethics and legal issues.
- Text based communication not multimedia.
- Lack of conceptual changes.

- The Internet and other network infrastructure.
- The quality of the information.
- The heterogeneity of the Healthcare Information Systems and applications.
- Funding models.

Other barriers that are necessary to overcome are related with components of the healthcare delivery models, especially with:

- Geographical conditions: remote and isolated areas.
- Administrative burdens due to bureaucratic limitations and regulations.
- Economic restriction for investments and expenditures in ICT.
- Educational lack of skills and training as well as capacity building programmes.
- Cultural constrains to the use of ICT devices (social, linguistic...).
- Personal limitations (age, physical, mental)

B.4 *Assessment of instruments and their impacts:* technology transfer, appropriate technology, technological choices and indicators

B.4.1 Technology transfer mechanisms and policies

Technology is the application of ideas, energy and resources to solve problems and to create change.

Technology transfer has been generally defined as the managed process of conveying a technology from one party to its adoption by another. In the context of this study can be defined as "the process by which existing knowledge, facilities or capabilities concerning health ICT in Europe are utilized to further tackle public or private domestic needs in different socio-economic environments present in developing countries".

All experts agree that the integration and transfer of new ICT technologies in health care is a complex issue; complexity that comes from the nature of both, the technology and the sector. The success of healthcare ICT, like other cases of technology transfer, may be affected by organizational, management, and technical problems. Many of these problems can be directly attributed to a strategic mismanagement of the assimilation and transfer process. This is being particularly evident with the present wave of technological change produced by Internet, mobile, and other ICT technologies, as a result of their pervasive, ubiquitous and systemic nature. Furthermore, the new products and applications, especially when are radical innovations, demand new facilities and procedures, i.e. they imply the introduction of process innovations.
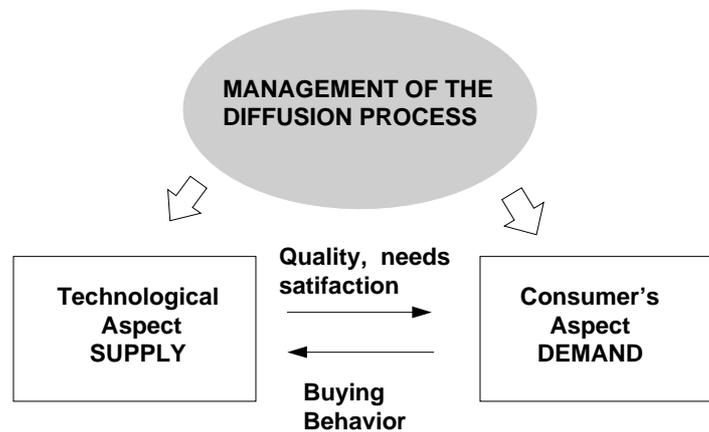
QUALITATIVE VIEW OF THE DIFFUSION PROCESS

Technology transfer may be conceptualized as a cooperative activity between an appropriate donor and a willing recipient. The interaction between the two determines both the efficiency and effectiveness of the process.

Effective management of the technology assimilation process includes raising awareness, exploring, motivating, mediating, projecting, planning and problem solving. Unfortunately, such a comprehensive approach has rarely been brought into play with health ICT applications' transfer for developing countries. Strategic level mismanagement severely constrains the conversion of technological possibilities into operational realities. As a result, there is a critical need to examine and enhance the organizational practices which are used to introduce, integrate and institutionalize ICT applications. Experience shows that the potential benefits of ICT will only be realized if the assimilation process is better managed. More generally, increasing the effectiveness of technology transfer processes must be seen as a global objective.

The successful assimilation of a new technology is usually a mutually adaptive process. The technology is incrementally altered to fit the receptive organization. Meanwhile the user environment is shaped to exploit the potential of the technology.

An organizational vision for ICT, and certainly the strategy making which may be associated with it, is likely to evolve over time. Specific changes may be triggered by unexpected hazards and unanticipated opportunities or their follow-on effects. However, environmental turbulence does not negate the need for a plan. It merely adds one more requirement of flexibility.

It is not easy to tackle technology transfer mechanisms in developing countries due to the great variety of aspects involved, related to structural underlying problems, socio-economic situation and dependencies created from the developed world.

The execution of a technology-integrated strategy embraces both acquisition and deployment. Technology acquisition goes beyond merely matching desired outcomes with needed technologies. It extends the demands on technology management to include the development of effective social structures that embrace new technologies. Simultaneously, the concept of technology deployment goes also beyond merely adding value for the final users (customers), by searching for more balanced sources of sustainable advantage, which comes from the organization "learning" how to constantly improve its technology acquisition and deployment capabilities (Continuous Learning Organization).

"Appropriate technology" is a concept used with different highlights depending on the focus and the context of use. The ecological approach refers to "appropriate technology" as the one which strives to minimize negative consequences to all life, and connects people with each other and the Earth. (http://www.dcat.net/about_dcat/mission.php). According with that vision, it is valued elegant solutions that enhance community self-sufficiency, build local economies, and draw on cultural wisdom. Furthermore this school of thought believes that hopeful and positive options are available to meet current and future needs, preserving and enhancing the natural regenerative capacities of our planetary life-support system.

Regarding Health Technology Assessment perspective "appropriate technology" has been linked to the concept of adequacy, efficiency and utility in local context.

In developing countries the provision of healthcare faces many problems including a severe shortage of funding, expertise and infrastructure.

Regarding "Appropriate technologies" for health ICT in developing countries , it is recommended to follow recommendations from WHO "to promote and support the development of policies on health technologies within the context of national health policies, and the establishment and strengthening of mechanisms for the assessment, development and transfer of health technology, including in particular, mechanisms for access to information on current and emerging technologies available nationally and worldwide".

The pattern of e-Health technologies adoption and usage at developing countries presents significant differences if compared with the case for traditional health technologies specially electro-medical devices for supporting medical activity. Typical examples are x-Ray, analyzers, electro cardiographers, etc.
e-Health products and services are radically different of traditional health technologies. In fact are services that can be produced and supplied at distance not necessarily at the local healthcare facility.

On the other hand, traditional healthcare technologies are tools designed to be used by health professionals to support their practice in his working place. Even traditional medical informatics systems are also systems designed to support professionals, i.e. managers, administrators, doctors and nurses. However, e-Health provides supportive tools for organisations and professionals but what makes a big difference is that also it provides applications directly for use of the   patients and the citizens in general.

The successful assimilation of a new technology requires an organizational climate which promotes innovation. A systematic approach for the transfer process, emphasizing communication, cooperation and coordination, is beneficial. This implies proactive management of the technology. In fact, it is well known that the commitment and involvement of senior and middle managers are the most important success factors in applying ICT to achieve strategic impact.

B.4.2   Indicators assessment

The objective of this section is the selection and discussion of quantitative data to measure the degree of penetration and take-up of ICT in developing countries, in particular in the health sector. This could allow for comparative analyses across countries or regions and for longitudinal follow-up.

PE 338.697

ANALYSIS OF USEFUL INDICATORS AND ASSESSMENT METHODOLOGY

In order to assess the Digital Divide, there are several methodologies developed by different institutions and organisations measuring key factors. The most recognised are the following:

Harvard Networked Readiness Index

The Harvard Networked Readiness Index (NRI) is an international assessment of countries' capacity to exploit the opportunities offered by ICT. The NRI distinguishes between variables that reflect the extent of network use and factors that determine the usability of the network, namely, the enabling factors. According to these criteria, 75 countries representing more than 80 per cent of the world's population and more than 90 per cent of its economic output are ranked.

Framework of Harvard Networked Readiness Index
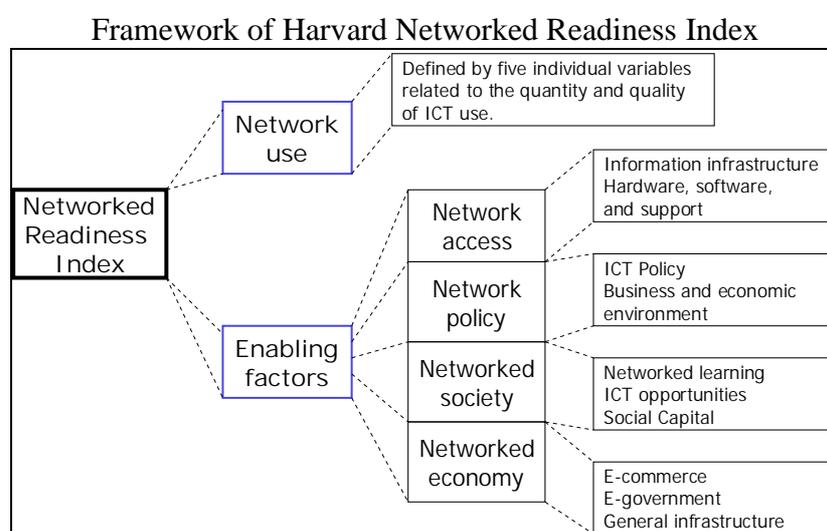
Source: Global IT Report 2001/2002

The network use component index and is defined as a straightforward measure of the extent of ICT proliferation in a specific country. It consists of five variables: Internet users per hundred inhabitants, mobile/cellular subscribers per hundred inhabitants, Internet users per host, percentage of computers connected to the Internet, and availability of public access to the Internet.

The four enabling factors component index (with constituent micro-indexes) is constructed to reflect the preconditions for high quality network use as well as the potential for future network proliferation and use in a country.
- Network access (information infrastructure and hardware, software, and support) considers the extent and quality of the network infrastructure and the existence of the equipment, programs, and support services that allow ICT to be used.
- Network policy (ICT policy, business and economic environment) relates to the information and communications policy environment as well as the business and economic climate
- Networked society (networked learning, ICT opportunities, social capital) assesses quality of learning using information and communication technologies, the extent of their use in the learning process, the extent of opportunities in the ICT industry, and societal and demographic factors.

- Networked economy (e-commerce, e-government, general infrastructure) refers to the extent to which the public and private sectors are participating in the networked world and the quality and availability of complementary infrastructure.

*INSEAD E-Economy Maturity Ranking (Benchmarking***)**

The INSEAD E-Economy Maturity Ranking (EMR) introduces an explicit emphasis on the three key players in a nation – individuals, businesses, and government – within the context of an enabling environment. This framework and its components not only provide a model for computing the relative development and use of ICT in countries, but also allows for a better understanding of a nation's strengths and weaknesses with respect to ICT.

Framework of INSEAD E-Economy Maturity Ranking
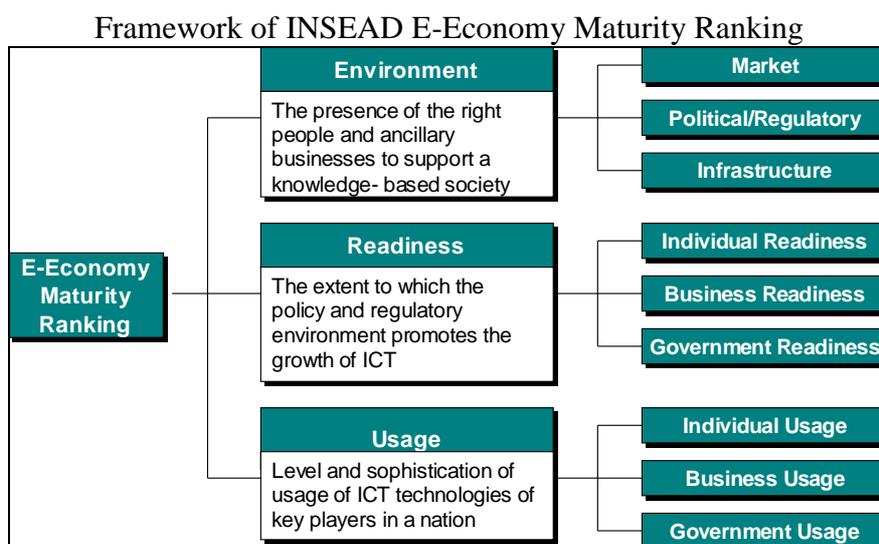
Source: Global IT Report 2002/2003

The framework is based upon the following premises:

There are three important stakeholders to consider in the development and use of ICT: individuals, businesses, and government.
There is a general macroeconomic and regulatory environment for ICT in which these stakeholders play out their respective roles. The environment component index is designed to measure the conductiveness of the environment that a country can provide for the development and usage of ICT.
The degree of ICT and the impact of ICT of the three stakeholders is linked to the degree of their readiness or capability to use and benefit from ICT. The readiness component indicator measures a number of factors, including the relevant skills for using ICT in individuals, access and affordability of ICT for corporations, and local government usage of ICT for its own services and processes.
The usage component is a measure of the level of impact that ICT has had on the principal stakeholders in the NRI Framework—that is, individuals, businesses, and governments. The assessment of usage includes changes in behaviours and lifestyles, and changes in other economic and non-economic factors brought about by the adoption of ICT.

McConnell International Model (Benchmarking)

McConnell International provides another benchmarking model which uses table with colour cells to illustrate the levels of ICT development in five categories, which address the following topics:

Connectivity: Are networks easy and affordable to access and to use?
E-Leadership: Is E-Readiness a national priority?
Information Security: Is there a trusted infrastructure for the processing and storage of networked information?
Human Capital: Are the right people available to support e-business?
E-Business Climate: How easy is it to do e-business today?

World Bank GICT Model (Diagnostic)

The World Bank GICT Department has developed a diagnostic model which identifies first the key constraints that prevent a country from fully realizing the benefits from the ICT revolution. After that exercise the model develops a strategic agenda that addresses each constraint and targets effective government policy and programmatic interventions. The strategic agenda presents a set of complementary, mutually reinforcing actions which could dramatically accelerate ICT development. The concepts for lending and technical assistance activities can then be outlined accordingly.

Analysys Toolkit (Mixed Methodology)

Analysys, a telecom consulting company, was commissioned by the WB to develop a toolkit to help policy makers in a country to propose national networking reform. It is a mixed methodology combining benchmarking and diagnostic techniques.

	Developing the case for national networking reform	Understanding obstacles and opportunities	Next steps	
	Benchmarking against comparable countries and neighbours	Understanding the obstacles to reform / Understanding opportunities to accelerate progress	Developing a programme for national networking reform	
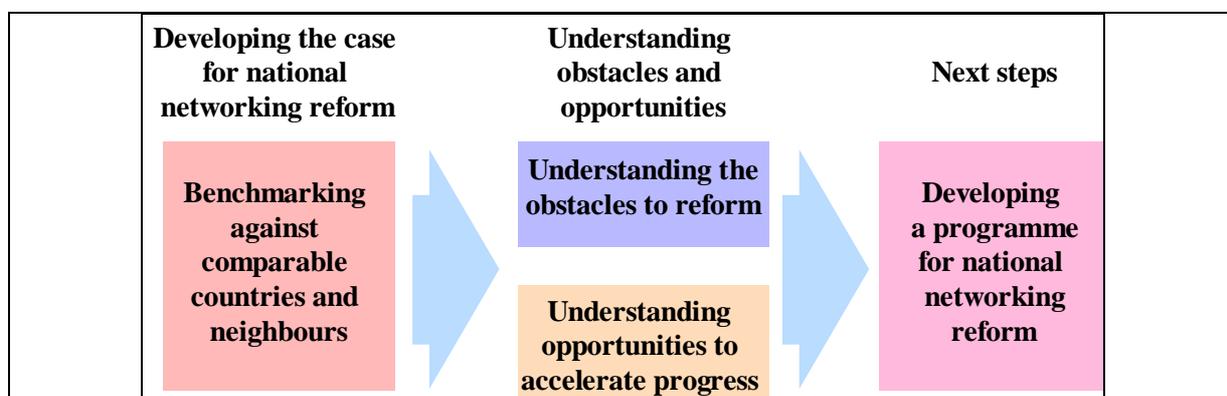
This toolkit compares the level of the home country with both its neighbours and comparable countries (by income, for instance). Such an analysis of comparative performance not only shows the level gap among countries, but also helps understand the obstacles to reforms, the opportunities to accelerate the progress and then define strategies accordingly.

GENERAL CONSIDERATIONS

Various areas ought to be considered for indicators, when addressing ICT performance, if we want to answer the needs of different stakeholders. In this sense, the areas most important for consideration are:
General ICT data:

- Public Telecommunication Networks.
- Telecommunication equipment manufacturing.
- Availability of ICT equipment at home.
- Access to Internet.

ICT on the Health Sector:

- ICT Infrastructure on Health Centres.
- Availability of Public Health Services through Internet.
- Public Health Digital Registers and Alert Systems.
- Healthcare professionals access to Internet.
- Use of Internet for Healthcare matters both by citizens and professionals.
- Quality of the information.

Macroeconomic data is needed for the calculation of many indicators. These data are regularly collected and disseminated by national statistical agencies, ministries and regional and international organisations (e.g., OECD, UN, World Bank, International Monetary Fund). It should be stated, that some of the indicators are obtained from derived statistics. For example, *main telephone lines per 100 inhabitants*.

We want to know the world developing ICT markets on the Health Sector and support developing countries overcome the barriers preventing ICT on the Health Sector to achieve its whole potential. In this sense, we consider that enough data is provided nowadays to have a picture for potential economic development, but little is being done in bridging the gap that the digital divide is creating. This is not only applicable to developed and developing countries, but also to different socio-economic and demographic profile groups.

The most relevant barriers preventing citizens from accessing the health information they need, could be divided into four categories that can be assessed by adequate indicators:

1) Barriers related to healthcare providers. Mainly are those inherent to the model of healthcare delivery.

2) Barriers related to the citizens *per se*:
   Lack of easy-to-access sources of quality relevant information.
   The problem of low health literacy: "those who are at the highest risk of preventable or treatable health problems have the greatest need for information and are the least likely to have access to such technologies" [5]
   Limited access to Internet, both at macro and micro levels:
   - The poorest countries have the worst access to information and communication (UNDP 1999)
   - Disadvantaged individuals within a society having the poorest health, inferior health literacy, and the worst access to information.

3) Barriers related to the information available:
   - Unlimited access to poorly organised information.
   - Few mechanisms to control the quality of information.

4) Barriers related to information and communication technologies:
   - Access should be easy, affordable and available in all settings

---

[5] Eng et al. 1998

- The barriers specific to developing countries are:
  - The high cost of computers.
  - The poor telecommunications infrastructure.

The barrier shared by both, developed and developing countries is the perception of computer-based systems as difficult to use.

LIST OF PROPOSED INDICATORS

The indicators proposed in the study are directed to monitor the digital divide, and therefore allowing for strategies to be developed in order to bridge this gap. "The field must not be left to market forces alone and active policy is required to push information technology to those who are underserved"[6].

In a top-down approach and based on adapted Balanced Scorecard architectures (Kaplan & Norton, 1992), four perspectives (views) should be taken into account, when talking about ICT on the Health Sector:
- Community (Society and the Individual).
- Health Professionals
- Financial
- Support (Infrastructures)

The **objectives** for each perspective must be defined in order to construct the valid indicators. We propose to monitor how strong or weak are the barriers for ICT development, which could grow the digital divide broader. If we put the emphasis on these barriers and choose pertinent (quality) indicators, the organisations will be able to measure the results produced by the strategies developed to supersede each barrier. The definition and knowledge of which is the satisfactory measure for a given indicator or *gold standard*, will guide decision-makers, managers, researchers and project leaders to take steps in order to achieve them.

The list of indicators should keep a balance between the ones that could be obtained from already available data that usually provide indirect knowledge of the objective, and the *ideal indicators* which will inform directly about the objective defined, but that are usually more difficult to construct, either because of the need of new data collection or either because the need to construct a whole new information system.

Some indicators could be repeated in more than one perspective although this is not the ideal situation. No more than five indicators per view are recommended; otherwise they will not be operational to assess strategies within the organisations, either national or regional.

Our proposal for Indicators on penetration and take-up of ICT for the Health Sector in Developing Countries, has the foundation on the assessment methodologies explained before, the architecture described above as well as based on a directed, non systematic, review of the literature. The following is the proposed list of indicators:

- COMMUNITY PERSPECTIVE
  1) Percentage of Internet Users over total population.
  2) Percentage of patients consulting Internet health information data.

---

[6] Eysenbach 2000

    3)   Citizens with some kind of card or electronically stored health data.
    4)   Population covered by public telecentres or similar community initiatives.
    5)   Comparison of general population and healthcare professional usage of the Internet.

- HEALTH PROFESSIONALS PERSPECTIVE
  1) Percentage of health professionals with Internet access at workplace.
  2) Percentage of visits with health information sources review by health professionals.
  3) Percentage of Healthcare Centres with Health Information system running.
  4) Public Health Indicators referring to outcomes (e.g. infant mortality, longevity).
  5) Availability of eLearning capacity building in Healthcare Centres.

- FINANCIAL PERSPECTIVE
  1) Percentage of total Healthcare Budget destined to ICT.
  2) Medium cost of a standard PC, using Purchasing Power Parties (which compensate for the different cost of living between countries).
  3) Provider/buyer of the equipment used by General Practitioners.
  4) Public budget dedicated to awareness actions for spreading access to Internet.
  5) Total funds invested on ICT infrastructures.

- SUPPORT PERSPECTIVE
  1) Main telephone lines per 100 inhabitants.
  2) Cellular mobile subscribers per 100 inhabitants.
  3) Internet total Users. (Rationale: about 40% of total internet consultations refer to Health issues).
  4) Existence of public and independent Telecommunications Regulatory Agency
  5) Healthcare administrative procedures available through ICT.

Regarding each one of these indicators, a metrics file must be completed in order to get the basic elements that define it. The file should contain the following fields:
- Name of the Indicator.
- Area of assessment (perspective).
- Calculation Formulae (not always).
- Strategic Objective (the objective which is being informed through the indicator).
- Relative weight of the indicator (in respect to the objective being evaluated).
- Source of the Data (information/s system/s providing the data).
- Computer (IP).
- Responsible (person in charge).
- Fields of the Database (those fields provided by the DB origin of the data).
- Observations (a complete description of the indicator and any other pertinent comment).

The following topics provide specific recommendations for the building of the indicators as complementary as possible to the definition and proposal presented.

- **Presentation of data:**

Data should be presented by country, by region and by continent to allow comparative evaluation. Real progress can only be monitored by comparing one country against another.

Due to this need for aggregation or desegregation of data (granularity), depending on the level of decision making, and with the current availability of specific ICT tools, we recommend the establishment of a **Balanced Scorecard for eHealth (EU-BSCeH)**, which based on raw data provided by various specific Strategic Information Systems (SIS), would be able to translate and communicate to the European Parliament, the European Commission and other organisations, policies and advancements on e-Health in the Developing Countries.

Another, less efficient but easier, possibility is to define a **Strategic Information System for eHealth (EU-SISeH)**. This lacks the communication capability to assess the strategies to the rest of the organisation/s although it is less time consuming to build and results can be presented earlier.

- *Proposed Methodology* (for the construction of the definitive list of Indicators)**:**

The construction of a definitive list of indicators is a question that must involve, at some stage, the responsible/s for defining the strategies and policies. The following proposed planning is based on a Focus Group.

- **Methodological sequence**:

1. Systematic Review of the literature about Indicators on e-Health:
a) Formulation of the exact question/s, clarifying and focussing the work for the researchers.
b) Search of the literature on the following areas:
   - Peer review journals, both on Medicine and Telecommunications.
   - International initiatives on indicators, specific for e-Health if available.
   - Working or research groups on this field, at academia and other levels.
   - Research, development and innovation (R+D+I) projects on e-Health, specially those mentioning assessment of the results.
c) Summarise the results on a document, establishing the levels of evidence, and including a ranking of Indicators by theme and perspective.

2. Work of the Focus Group:
a) Definition and selection of the members: including the persons preparing strategies on e-Health, with no more than 12-15 members, multi-disciplinary and inter-levels.
b) Study of the results of the Systematic Review.
c) First Meeting: including the author/s of the Review in order to explain doubts and also how to assess the indicators.
d) Personal evaluation of the proposed list.
e) Final meeting to obtain a final List of Indicators to include in the BSC[7] or SIS.

- **Collection of data: (Reporting period)**

Indicators should be collected at least on an annual basis, retaining historical data for measuring trends and forecasting future demands. Data should refer to the same period to enhance the precision of derivations. In this way, the use of a common reporting year is desirable, otherwise comparative analysis would be unreliable.

---

[7] BSC: Balanced Scorecard.

- **Fixing "gold standards" for the indicators:**

This is not an easy task for technologies that are so recent and suffering so many rapid changes. There is no time physically to allow for international organisations to discuss and build consensus standards (not to mention the market to fix it!), but some clues can be given. The most usual way is calculating the average of the 3-5 top countries on the field trying to follow what could be considered "best practices". There are many other statistical ways of achieving similar results but sometimes the results are more difficult to assess.

Nevertheless an indicator should not be a static unquestionable issue and on the other hand it should be dynamic and always subject to criticism and amelioration, even to substitution. In this sense, periodical proposal of new indicators and re-assessment of the previous ones is recommended. A very important question is to maintain a cautious balance in removing or introducing new indicators, otherwise, no future trends could be obtained if changes are too frequent to avoid long evolution series.

- **Successful policies:**

Some authors consider that a successful policy must include three elements that should be assessed when analysing digital divide or information society extension:
- Competition.
- Private sector participation.
- Independent regulation.

The following review of the Current Facts and Trends on ICT, in some areas of the world in development, would help to operationally direct indicators and recommendations:

Latin America:
   Privatisation of telecommunications:
- One quarter of public telephone operators world-wide that had been privatised by the end of 1999 were in the Americas region.
- More than two-thirds of the countries have either partially or fully privatised their telecommunications companies (Africa 28%, Arab States 33%).
- The fastest growing mobile market in the world:
  - In 1999, one in every four telephone users in Latin America depends on a mobile phone.
  - More than 60 mobile cellular companies have sprung up in the region since 1990.
  - Two-thirds of Latin America states had a competitive mobile market.
  - The number of new cellular subscribers has started to exceed by far the number of new subscribers to traditional fixed line services.
  - Pre-paid service has been a mayor driver of cellular growth in the region.
- Internet expansion:
  - The number of Internet host computers grew faster than in any other region of the world in 1999.
  - Internet users climbed almost 14-fold between 1995 and 1999, to reach over 9 million.
  - Growing number of initiatives to install Internet terminals in public locations.

Asia-Pacific:

- The global telecommunication epicentre looks to be shifting from North America and Western Europe to Asia-Pacific. In 2001, the region emerged as the world's largest telecommunication market.
- Over one-third of the earth's telephone subscribers are in this region.
- Internet development:
  - 160 million users in 2001 (one-third of the world total).
  - Broadband Internet: five Asian economies are between the top twelve world-wide.
  - In June 2002, the region accounted for almost half the world's ADSL connections.
  - The region has more users of high-speed mobile Internet than the rest of the world put together.

- Mobile market:
  - In April 2002, Taiwan pierced the theoretical ceiling of 100% mobile penetration, and shows little sign of slowing down.
  - The biggest impact has come among the Least Developed Countries (LDC) of the region. In 1993, Cambodia became the first country in the world where mobile phones exceeded fixed-line connections.
  - Two countries are pioneering the mobile Internet: Japan having the largest number of users and Republic of Korea the most high-speed mobile Internet users.

Asian governments are much more active participants in the telecommunication sector than those on other regions. They have also been good in changing regulations when needed in a practical manner.

B.5   *Relevant case studies: lessons learned and examples of best practices*

B.5.1   Emerging anticipatory experiences and trends

Capabilities of response of health systems for adopting ICT technologies depend on many factors. One of them concerns the differences between public and private organisations.

Laws, regulations, policies, social values, and cultures provide the framework within which publics institutions operate. Changes in these parameters of the decision making structure of public institutions can only take place slowly, step by step with varying political, social, and economic pressures. The greater the involvement of interest groups, the slower will be the response of public institutions.

Private healthcare business organizations often act more quickly. But even they have impediments to speedy response to new processes and new technologies adoption. They also involve bureaucracies hindered in pervasive internal conflicts and complex processes of compromise.

Generally the response time of public health systems, is the slower. Private owned hospitals and clinics act quicker but the fastest responders normally are individuals. TV, the Internet, mobile and other forms of communications empower individuals to act on their own. This makes a fundamental difference in how the future of ICT based healthcare services can evolve. It opens the way for differential speeds of change, not only among countries, but also within each country. New ICT services, like Internet, make possible for citizens to obtain health services access out of local traditional healthcare providers even from other countries.

Similarly, healthcare professionals can access scientific knowledge and medical advice at their own home from the entire world.

It is convenient to anticipate trends in structural changes in the global economy. This is not a matter of anticipating future technological developments but rather of anticipating the consequences of increased global integration and the impact on developing countries.

SUCESS STORIES

Biblioteca Virtual em Saude

The case of the VHL (BVS[8]) represents the spread of the current technical cooperation model, which promotes a decentralized production and uses of the multimedia information sources. A network connection with direct and global access, with no geographical nor schedule limitations. This project is a clear sign of how ICT applied to health became a useful tool to improve knowledge access and work sharing.

Assists developing countries to realise locally owned sustainable development by harnessing the potential of information and communication technologies (ICTs).

Region: Africa: Burkina Faso, Ghana, Mali, Tanzania, Uganda, Zambia.
IICD: International Institute for Communication and Development
The International Institute for Communication and Development (IICD) assists developing countries to realise locally owned sustainable development by harnessing the potential of information and communication technologies (ICTs). IICD works with its partner organisations in selected countries, helping local stakeholders to assess the potential uses of ICTs in development. We focus on 'traditional' development sectors, such as education, good governance, health, livelihood opportunities (especially agriculture) and environment. IICD is an independent non-profit foundation, established by the Netherlands Minister for Development Cooperation in 1997. Its sources of core funding are the Directorate-General for Development Cooperation (DGIS), the UK Department for International Development (DFID) and the Swiss Agency for Development Cooperation (SDC).

AFRO-NETS: African Networks for Health Research Development.

Satellife.
Region: Africa
The electronic conference for the 'African Networks for Health Research Development' (AFRO-NETS) was established in 1997 to facilitate exchange of information among different networks active in Health Research for Development in Anglophone Africa, and to facilitate collaboration in the fields of capacity building, planning, and research.

Right-to-Care not-for-profit HIV/AIDS managed care initiative.

Botswana.
United Nations Development Programme.
HIN: Health InterNetwork.
The strategy is to use web-based technologies to reduce costs for diagnostics, treatment and monitoring as part of a national managed-care programme which includes anti-retroviral therapy. Currently, anti-retroviral drug treatments cost patients between R600 and R1 500 a month with lab tests of R466 a month. Through R2C, costs will drop to a total of R700 a month with administration fees of R30 a patient a month for the first 5 000 patients. Once there are 100,000 patients on the programme costsare expected to drop to R10 a month and by the time there are 250 000 patients, the monthly cost for patient care, including lab tests and monitoring by a doctor, are expected to come down to R8 a month. The objective of the International Association of Physicians in Aids Care (IAPAC), a US-based NGO, is to

---

[8] BVS: Biblioteca Virtual em Saúde

rapidly build infrastructure, develop capacity, and implement targeted programs that will produce measurable outcomes. It aims to marshal general practitioners into an accredited network it hopes will form the backbone of expanded Aids treatment in SA. Though the initiative will initially be limited to the private sector, the aim is to create a national Aids infrastructure that encompasses proven clinical guidelines, technical know-how, and logistical and IT support that can be transposed into a public health setting should government decide to make anti-retrovirals widely available.

Physician-Based Sentinel Surveillance System for Emerging Health and Disease problems in the Caribbean

Region: Latin America & the Caribbean
The Project, utilising current and new technologies in information and communication, develops national capability in Caribbean countries for monitoring trends, and the prompt detection, investigation and control of emerging (e.g. cholera) re-emerging (e.g. measles, food borne outbreaks in hotels) health problems. An electronic information system for the real time surveillance of emerging and re-emerging health and disease problems is being established at physician's offices, in Trinidad & Tobago, Jamaica and St. Lucia. The data is also being used to monitor the effect of the interventions. The project strengthens the Caribbean College of Family Physicians (CCFP), an NGO, and both in general and specifically through enhanced distance education.

InfoDev Health Information Training Center

Region: Sub-Saharan Africa
InfoDev funds assist in establishing a pilot East African Regional Information Technology Training Centre (RITTC) in Nairobi, Kenya.
The RITTC offers two courses for individuals recruited from health-related institutions and organizations in Eritrea, Ethiopia, Kenya, Tanzania and Uganda. The first course is a three-day introduction to information technology and its health applications. The second is a one week training course designed to create a cadre of Information Technology Trainers (ITTs), i.e. a group of health professionals skilled not only in the use of information technology, but also capable of training other health professionals in their home countries. The RITTC will be administered by SatelLife with assistance from the network management team of HealthNet Kenya (HNK) in planning and implementing the Project

AIDSWEB

Region: Sub-Saharan Africa
The overall HIV prevalence rate among African youth shows the continuing need for HIV/AIDS educational prevention activities targeted specifically for the young people who are not yet affected. The use of information and communications technologies (ICT) complements other Information Education and Communications (IEC) campaigns designed to reach youth. The same technology resources -- e-mail, CD-ROMs, listserves and the World Wide Web -- that can link HIV/AIDS educators and activists around the world, also holds great promise for reaching youth, who typically embrace the use of the technology for entertainment, learning and communication when given access to these resources.

SatelLife

Over the past fourteen years, SatelLife has been developing solutions to the information needs of health professionals working in communities where AIDS and malaria are commonplace, but medical journals and the Internet are an unaffordable luxury. At present, their most notable campaign is the PDA project, focused on the use of handheld computers and wireless technologies. These enable health workers in areas where electricity, telephone lines and books are not readily available to receive medical information. Phase one in Ghana has been a remarkable success.

Informedica

An experience of on-line congress and professional journal, intended for the benefit of health professionals (doctors, nurses and others), especially in Latin America. The low-cost of taking part (free for anyone with an Internet access), facilitated the participation of many people interested in keeping up with current developments in their profession and continued education. The Informedica congress brought together 6,000 virtual participants.

The US/Russia Child Health Care Telemedicine Network

Managed by the Rostropovich foundation and funded by the World Bank, the project creates an international tele-health care network that will provide Russian paediatric medical personnel in St. Petersburg, Russia, with the education and clinical training necessary for the effective management of children with cancer.

EHAS Program

(Hispano American Health Link) has developed a range of low-cost telecommunication systems and information services solutions, specially designed for rural primary health personnel of isolated areas in developing countries. The initial collaboration was undertaken by the Polytechnic University of Madrid, and Engineers without Frontiers, a Spanish NGO, for the benefit of communities living in the Peruvian jungle. At present the project covers also Colombia and Cuba and it is planned to be present in Mexico and El Salvador.

Supercourse

Under the leadership of Prof. Ron LaPorte from the University of Pittsburgh, an impressive international collaboration has been put in place. More than 1,400 lectures, in easily accessible electronic format are available for free, on a very broad range of subjects related to prevention, epidemiology and public health. More than 10,000 faculty from 151 countries, have contributed with the lectures, covering 8 languages.

Dissemination of information and promotion of sustainable development initiatives.

Associates for Community and Population Research.
Established in 1998, ProPoor is committed to the dissemination of information and promotion of sustainable development initiatives, in response to the needs of under represented and marginalized sectors of society in the South Asia. ProPoor is underwritten by The ProPoor InfoTech Centre Trust, Rajkot, Gujarat (India) and is administered by Charity Focus. Mission: To work for the welfare of the weaker sections of the society and to organise campaigns with the aim of making people aware of the need for family planning.

B.6   The EU contribution

 Along this last chapter we will review what has been done so far in relation to the use of ICT in the field of health for Europe, namely the state of the art and the e-Europe initiative, what has been done in cooperation with developing countries through a critical analysis and the role that EU and other donors might assume in the future.

B.6.1   Europe state of the art

At the Lisbon European Council (March 2000), the European Union set itself a new strategic goal for the next decade: to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion. Enhancing innovation is one of challenges posed by the E.U. Lisbon Council to meet the target to become the most competitive and dynamic knowledge-based economy by the end of the decade, bearing in mind that the threat the advanced economies have to face in the next years will be to integrate, promote and enhance the innovation activity in the whole areas of the economy.

Within the health activities and related to DGSANCO, the High Level Committee on Health has established a Working Group on Health Telematics. This Working Group has been asked to review the introduction of information and communications technology (ICT) in the health sector, the factors promoting or inhibiting its development, and areas where Community legislation could be beneficial. The Group considered particular applications of ICT in health, namely health cards, virtual hospitals and provision of health-related information to health professionals and patients.

The Community health information and knowledge system will have different audiences or users. While different audiences will benefit from the similar information they also need different features in the system. The system will be adapted to serve different audiences,

- Health information and knowledge for citizens and patients aims at supporting the national efforts to inform the public on health issues and at making available topical health information with direct relevance to the Community dimension.
- Health information and knowledge for professional audience aims at providing a timely, accurate and comparable description of the health situation, health determinants and health policies in the EU and candidate countries.
- Health information systems required by and supporting the application of the Community legislation are implemented to fulfil the legislative needs. These systems need to be integrated, where appropriate, into the system for the professional audience.

At European level, policy for wide spreading the use of ICT in all facets of life and the proactive impulse to promoting e-inclusion, as a deep social concern, is a good example.

In this regards, it is important to mention the objectives of the Declaration of Principles and the Plan of Action adopted at the last World Summit on the Information Society (Geneva, December 2003), to be achieved by 2015: "To build an inclusive Information Society; to put the potential of knowledge and ICTs at the service of development; to promote the use of information and knowledge for the achievement of internationally agreed development goals,

including those contained in the Millennium Declaration; and to address new challenges of the Information Society, at the national, regional and international levels"

In order to reach these objectives, several indicative targets have been established as global references for improving connectivity and access in the use of ICTs, and should be taken into account in the establishment of the national targets. From them special mention should be done to: "to connect scientific and research centers with ICTs; to connect health centres and hospitals with ICTs; to ensure that all of the world's population have access to television and radio services; to ensure that more than half the world's inhabitants have access to ICTs within their reach".

Concerning e-health the following actions are recommended to be included in the national e-strategies:

"a) Promote collaborative efforts of governments, planners, health professionals, and other agencies along with the participation of international organizations for creating a reliable, timely, high quality and affordable health care and health information systems and for promoting continuous medical training, education, and research through the use of ICTs, while respecting and protecting citizens' right to privacy.

b) Facilitate access to the world's medical knowledge and locally-relevant content resources for strengthening public health research and prevention programmes and promoting women's and men's health, such as content on sexual and reproductive health and sexually transmitted infections, and for diseases that attract full attention of the world including HIV/AIDS, malaria and tuberculosis.

c) Alert, monitor and control the spread of communicable diseases, through the improvement of common information systems.

d) Promote the development of international standards for the exchange of health data, taking due account of privacy concerns.

e) Encourage the adoption of ICTs to improve and extend health care and health information systems to remote and underserved areas and vulnerable populations, recognising women's roles as health providers in their families and communities.

f) Strengthen and expand ICT-based initiatives for providing medical and humanitarian assistance in disasters and emergencies."

B.6.2   e-Europe action plan

The eEurope Action Plan was endorsed by the European Council in Seville, Spain on 21-22 June 2002. It has set the objective for Europe to have, by 2005 « modern, online public services ». One of the proposed actions is to promote e-health services.

Specific plans are:

Electronic health cards. Building on the agreement at the Barcelona European Council that a European health insurance card will replace paper based forms needed for health treatment in another Member State; the Commission will make a proposal in 2003. The Commission intends to support a common approach to patient identifiers and electronic health record architecture through standardisation and will support the exchange of good practices on possible additional functionalities, such as medical emergency data and secure access to personal health information.

Health information networks. By end 2005, Member States should develop health information networks between points of care (hospitals, laboratories and homes) with broadband connectivity where relevant. In parallel, the Commission intends to set up European-wide information networks of public health data and co-ordinate actions for Europe-wide rapid reactions to health threats.

Online health services. By end 2005, Commission and Member States will ensure that online health services are provided to citizens (e.g. information on healthy living and illness prevention, electronic health records, teleconsultation, e-reimbursement). Some of the health and related preventative services (e.g. air and water quality online information) could be expanded to a trans-European level through the eTEN programme. The Commission will monitor actions taken by Member States to make health information as accessible as possible to citizens as well as initiatives to implement quality criteria for web sites.

Politically, the eEurope programme is predicated on the fact that the information society has much untapped potential to improve productivity and the quality of life. This potential is growing due to the technological developments of broadband and multi-platform access, i.e. the possibility to connect to the Internet via other means than the PC, such as digital TV and 3G. These developments, combined with the new wireless technological options, Wi-fi and Bluetooth that are opening up significant opportunities to enhance the quality of life of citizens improving healthcare services.

B.6.3   Health cooperation programmes

An analysis on governments and multilateral agencies' health cooperation policies linked to ICT is a complicated task. Due to ICT horizontality, it might be easier and more realistic to analyse and obtain practical conclusions from approved, ongoing or finished projects than from institutional declarations that, when existing, just describe their position in the general terms above mentioned.

However, neither the projects' analysis seems to be easy. As an example, from a search on health projects financed between 1998 and 2002[9] just 9 out of 5.690 registries corresponded to the generic title "Health information Systems". Of course, this does not mean that the rest of them do not contain to greater or lesser extent references to ICT, being required a study case by case.

The EUROPAID's report "Evaluation de l'aide de la CE dans les pays ACP/ALA/MED dans le domaine de la santé" [10] (July 2002), focused on actions funded by the EC from 1995 to 2000, highlight in its introduction the lack of clarity in health intervention strategies and the heterogeneity of the actions carried out as well as the absence of an integrating sectorial or geographical perspective.

From the reply given by EC's services with the "Fiche Contradictoire"[11], it seems that, despite time passed, EC cooperation policy reorganisation and restructure remains unfinished. On this regard, responses like "A reinforcement of the sectored coordination with

---

[9]   http://www1.oecd.org/scripts/cde/members/CRSAuthenticate.asp, consulta -5- CRS ODA/OA Disbursements by sectors: Forms 2 / Forms 1 - Transaction
[10]   «Evaluation de l'aide de la CE dans les pays ACP/ALA/MED dans le domaine de la santé - 07/2002 - ref. 951589 » en http://europa.eu.int/comm/europeaid/evaluation/program/sectorrep.htm
[11]   http://europa.eu.int/comm/europeaid/evaluation/response/sector/951589_rsp.pdf

DEV/ECHO/RELEX should be a key response to this recommendation"[12]; leads to believe that the "multi responsibility" (or "multi- competition"?) held by different EC's departments continue and so does its main consequence: the lack of coordination. This issue is also considered in a report published by the World Bank and the International Monetary Fund that will be explored in more depth afterwards.

On the other hand, the type of responses given by Donor countries and multilateral agencies to the OECD-DCD questionnaire mentioned before, confirms the difficulty of the analysis. As show its executive summary, just 9 donors and 4 agencies gave detailed and exhaustive responses to the questionnaire; 14 donors and 13 agencies just filled in the sample matrix; while countries like Belgium, Portugal or Spain contributed with no information at all.

Parallel Internet search, together with the response, allowed OECD to complete the data obtained with the questionnaire and build a more complete matrix containing 22 Development Assistance Committee (DAC) countries and 25 multilateral agencies.

OECD Matrix's content analysis shows that just Australia, Canada, Germany, USA, Greece, Japan and New Zealand do explicit mention to programmes or actions on ICT and Health. Belgium does not give any information while Denmark and Ireland do not have specific policies concerning ICT cooperation.

On this regard, the European Commission (EC), considered a DAC member, emphasizes that while ICT are not seen as a priority sector as such for Community development cooperation, they do provide an important tool for more efficient and effective aid delivery and need to be recognised as an increasingly important element in the economic and social fabric of countries world-wide. Furthermore, EC points out that since ICT and development is a relatively new area of co-operation there is a need to devise a systematic approach with a view to monitoring and evaluating better outputs. In this sense, it is suggested that the EC and Member States create a knowledge management system in ICT and development.

In addition, the EC has, under the leadership of AIDCO, established an internal thematic working group on ICT in order to mainstream ICT in its development portfolio.

Concerning its implementation, further EC action will take place in countries within the strict context of the new EC development policy, and notably its six priority sectors with an overall focus on poverty reduction: trade and development, regional integration and co-operation, macroeconomic policies and equitable access to social services, transport, food security and sustainable development, and institutional capacity building.

Regarding multilateral agencies just the Inter-American Development Bank, the International Telecommunication Union (ITU), the United Nations Development Programme (UNDP), the United Nations Economic Commission for Africa, the UN Information Technology Services (UNITeS) and the World Health Organisation (WHO) clearly include health among their policies, strategies or areas of interest.

Summarising, from the information collected by the OECD matrix it can be conclude that:

---

[12] In french in the Web: «Une renforcement de la coordination sectorielle avec DEV / ECHO / RELEX devrait être un facteur de réponse à cette recommandation.»

PE 338.697

Most donors recognise that ICT is a powerful force in shaping the social and economic development of society. Consequently they have now developed a strategy not only to use ICT for development within their existing and new programmes but also to integrate ICT within their own agencies to improve the way they deliver their development programmes.

Strategies are guided by the needs of developing countries, particularly the priorities identified in the Millennium Declaration.

ICT are considered in the broad sense, encompassing both traditional, old technologies (telephone, radio, television) and high technologies (Internet, mobile phones) and some donors emphasise the interest of combining both new and old technologies to maximise benefits.

ICT are in most cases seen as tools to help meet development objectives and not as a separate sector.

In all cases, donors put ICT to the service of the achievement of their broader strategic objectives. The focus is on meeting objectives not on technology *per se.*

Donors' guiding principles for use of ICT for development emphasise respect for national ownership and that support should be demand-driven, encouraging and assisting developing country governments to formulate their own ICT development strategies. When developing countries decide to harness ICT for development, some donors recommend that those developing country governments include their ICT for development strategy in their Poverty Reduction Strategy Papers (PRSPs).

ICT serve to help meet objectives in a number of development sectors including but not limited to health, education, environment, e-commerce, and e-government. Furthermore, ICT are used to promote knowledge sharing and networking.

Most donors have built their ICT for development strategy on partnerships involving a number of actors from other bilateral and multilateral agencies, ministries (communications, education…), civil society, the private sector, universities and research institutions.

Nevertheless, the above mentioned matrix[13] does not include several multilateral initiatives on ICT applied to Health actions carried out by important organisations. That is the case of the Digital Opportunity Task Force (DOT Force), implemented by the G8 and the United Nations Information and Communication Technologies Task Force[14]. Other examples are the WHO's regional initiatives, like the PAHO, which made possible projects like BIREME [15] and fostered initiatives concerning health information access and dissemination, like the Virtual Health Library (VHL) [16].

The G8 DOT Force [17] fostered greater international public-private co-operation aimed at three fundamental development objectives:

---

[13] See table 1 (Annex 1): OECD report's specific references to health sector within ICT cooperation policies
[14] http://www.unicttaskforce.org/
[15] http://www.bireme.br/bvs/bireme/
[16] http://www.bireme.br/bvs/P/pdoc.htm
[17] http://www.oecd.org/document/20/0,2340,en_2649_34835_2506964_1_1_1_1,00.html

- creating the right policy frameworks for ICT investment and growth;
- promoting ICT as practical tools for development in critical areas like education and health: and,
- advancing implementation strategies which link ICT development and use to broader economic and social goals, especially in relation to the Millennium Development Goals

The key elements in making the DOT Force an effective partnership were its multi-stakeholder nature, its strong orientation towards concrete action, its responsiveness to the development needs identified by developing countries themselves, and its emphasis on concrete commitments by all partners. The importance of policy coherence, partnership, political commitment and accountability is an important lesson for other international ICT initiatives.

The necessity of coherence between DC's policies and the aid received through cooperation on ICT and Health is an issue not only supported by the OECD-CD and the G8 but also by other international organisations. The conclusions of the Information and Communication Technology for Development Forum (OECD Paris 4-5 March 2003), stressed the importance of a coherent coordination and pointed out that:

Few countries have thus far integrated ICT into their national development plans or Poverty Reduction Strategy Papers (PRSPs). These strategies should act as the focal point for developing countries and donors to design their ICT interventions and assistance, so as to maximise the poverty-reducing impact of ICT.

Local actors, local initiatives, and local content should be emphasised in ICT for development initiatives. The local private sector has a major role in promoting effective use of ICT and in strengthening local production capacity and creating jobs. Donors should try to anchor ICT projects at the local level and harness local capacity, including the private sector and non-governmental organisations. In all these efforts, special attention should be paid to using ICT to address the gender dimension of poverty.

In that respect, the World Bank and the International Monetary Fund published on 15 March 2002 their Review of the Poverty Reduction Strategy Papers: Main findings[18]. Among their recommendations to improve Donors' alignment and harmonisation it must be highlighted that:

Donor alignment and harmonization of donor processes are crucial to sustaining the PRSP approach. This is difficult to reach due to weak country ownership of donor-financed programs, and the fragmentation of governmental programs and institutions caused by multiple, and often inconsistent, donor aid delivery and management policies and procedures.

Donors must take very seriously the challenge of aligning their programs with countries' PRSPs. If this challenge can be met, PRSPs will become effective instruments for countries to gain better control over external assistance

Low-income countries should take the lead in donor coordination and alignment and donors need to accept and defer to such government leadership

---

[18] http://www.worldbank.org/poverty/strategies/review/findings.pdf

Many donors remain cautious about such support given weak public expenditure and fiduciary management systems.

Although achieving donor alignment and harmonization around countries' PRSPs is a challenge for the entire donor community, the World Bank and the Monetary Fund have a special responsibility to demonstrate their own willingness and ability to do so.

Within the conclusions it is emphasised that "There is also a need for patience, perseverance, and realism about what can be achieved in the short-run, while helping countries build the capacities to implement sound policies and monitor progress over the medium- and long-run". That means to design and implement cooperation policies in tune with the necessities and possibilities of the receptors in order that fitting against poverty became a sustainable and effective reality

Developing countries' positions on ICT, regarding both their national programs and their PRSP, are detailed in Annex II, adapted from "Examples of Information and Communication Technology (ICT) in National Development Plans" as of February 2003 (27-Feb-2003) [19] and the "Information and Communication Technology (ICT) in Poverty Reduction Strategy Papers (PRSP)" as of January 2003 (25-Feb-2003) [20].

In addition, it is important to bear in mind that for most developing countries ICT do not strictly refer to "High Technology" or "New Technology" but also to those considered traditional or old technologies by developed countries. Actually, in DC's reports the term telecommunication is more used than the expression ICT or "Information Technology". Thus, in DC to extend and democratize the telephone and radio networks became a priority without which it is impossible to think about other kind of ICT action.

On this regard, a combined analysis of the matrix from annex 1 together with DC declarations, should guide donors when defining their strategies and alliances on ICT's related policies applied to Health.

The Declaration of Principles and Plan of Action adopted at the last World Summit on the Information Society (December 2003), states that one of the aims is to make full use of the opportunities offered by ICTs in the efforts to reach the internationally agreed development goals, including those contained in the Millennium Declaration. In this regards, it is an agreed worldwide objective to contribute to bridge the digital divide, promote access to ICTs, create digital opportunities, and benefit from the potential offered by ICTs for development.

In order to reach this objective, a Digital Solidarity Agenda has been set, and it is intended to assist developing countries through the mobilization from all sources of financing, the provision of financial and technical assistance and by creating an environment conductive to technology transfer.

The cooperation at all levels and among all stakeholders (governments, the private sector, civil society, and international financial institutions among others) is crucial for the implementation of this Agenda. As well as to use more efficiently existing approaches and mechanisms and fully explore new ones, in order to provide financing for the development of

---

[19] http://www.oecd.org/dataoecd/53/53/2499940.doc
[20] http://www.oecd.org/dataoecd/53/54/2499909.doc

PE 338.697

infrastructure, equipment, capacity building and content, which are essential for overcoming the digital divide.

In this regards the following priorities have been set:

"a)   National e-strategies should be made an integral part of national development plans, including Poverty Reduction Strategies.

b)   ICTs should be fully mainstreamed into strategies for Official Development Assistance (ODA) through more effective donor information-sharing and co-ordination, and through analysis and sharing of best practices and lessons learned from experience with ICT-for-development programmes."

As for mobilizing resources the following actions have been proposed:

"a)   All countries and international organizations should act to create conditions conducive to increasing the availability and effective mobilization of resources for financing development as elaborated in the Monterrey Consensus.

b)   Developed countries should make concrete efforts to fulfil their international

commitments to financing development including the Monterrey Consensus, in which developed countries that have not done so are urged to make concrete efforts towards the target of 0.7 per cent of gross national product (GNP) as ODA to developing countries and 0.15 to 0.20 per cent of GNP of developed countries to least developed countries.

c)   For those developing countries facing unsustainable debt burdens, we welcome initiatives that have been undertaken to reduce outstanding indebtedness and invite further national and international measures in that regard, including, as appropriate, debt cancellation and other arrangements. Particular attention should be given to enhancing the Heavily Indebted Poor Countries initiative. These initiatives would release more resources that may be used for financing ICT for development projects.

d)   Recognizing the potential of ICT for development we furthermore advocate:

    I. developing countries to increase their efforts to attract major private national and foreign investments for ICTs through the creation of a transparent, stable and predictable enabling investment environment;

    II. developed countries and international financial organisations to be responsive to the strategies and priorities of ICTs for development, mainstream ICTs in their work programmes, and assist developing countries and countries with economies in transition to prepare and implement their national e-strategies. Based on the priorities of national development plans and implementation of the above commitments, developed countries should increase their efforts to provide more financial resources to developing countries in harnessing ICTs for development;

    III. the private sector to contribute to the implementation of this Digital Solidarity Agenda.

e)   In our efforts to bridge the digital divide, we should promote, within our development cooperation, technical and financial assistance directed towards national and regional capacity building, technology transfer on mutually agreed terms, cooperation in R&D programmes and exchange of know-how.

f)	While all existing financial mechanisms should be fully exploited, a thorough review of their adequacy in meeting the challenges of ICT for development should be completed by the end of December 2004. This review shall be conducted by a Task Force under the auspices of the Secretary-General of the United Nations and submitted for consideration to the second phase of this summit. Based on the conclusion of the review, improvements and innovations of financing mechanisms will be considered including the effectiveness, the feasibility and the creation of a voluntary Digital Solidarity Fund, as mentioned in the Declaration of Principles.

g)	Countries should consider establishing national mechanisms to achieve universal access in both underserved rural and urban areas, in order to bridge the digital divide."

We should conclude that there is room for improvement on the notable efforts that the European Institutions, and other international Donors, are doing in cooperation for development, specifically in the health sector introducing in an effective manner ICT as a valuable tool for the amelioration of the health condition and the delivery of care.

We suggest now to the readers to go back to the first section, and review the conclusions and the proposed recommendations at the light of the information contained in the report.

C. TECHNICAL FILE

C.1.1 Additional Information

C.1.2 Analysed and Reviewed documents

1. Developing countries and the ICT revolution, A STOA study. Directorate General for Research, European Parliament (PE 296.692/Fin. St.), March 2001.
2. Information and communication technologies in development. The role of ICTs in EC development policy, European Commission (COM (2001) 770 final), December 2001.
3. ACP-EU partnership, signed in Cotonou, June 2000, article 43.
4. The Asia Information Technology and Communication Programme, [online] europa.eu.int/comm/europeaid/projects/asia-itc/html/main.htm.
5. The Eumedis initiative, [online] europa.eu.int/ISPO/eumedis/englishversion/i_eumedis_def_en.html.
6. @lis project,[online] europa.eu.int/comm/europeaid/projects/alis.
7. The Digital Opportunity Task Force (DOT Force), [online] www.dotforce.org.
8. ITU's Telecommunication Development Bureau, [online] www.itu.int/ITU-D.
9. Department For International Development (DFID), [online] www.dfid.gov.uk.
10. International Development Research Centre (IDRC), [online] www.idrc.ca.
11. Acacia Initiative, [online] www.irdc.ca/acacia.
12. Enlace Hispano Americano de Salud (EHAS), [online] www.ehas.org.
13. Andres Martínez et al.: EHAS Program: Rural Telemedicine Systems for Primary Healthcare in Developing Countries. Working paper.
14. SATELLIFE: The Global Health Information Network, [online] www.healthnet.org.
15. Informedica, [online] www.informedica.org and Informedica Journal, [online] www.informedicajournal.org
16. Supercourse. Epidemiology, the Internet and Global Health, [online] www.pitt.edu/~super1/.
17. United Nations Information and Communication Technologies Task Force, [online] www.unicttaskforce.org.
18. United Nations Development Programme. Information and Communication Technologies, [online] www.undp.org/rba/ict4dev.html.
19. United Nations Development Programme. ICT for Development, [online] sdnhq.undp.org/it4dev.
20. Unites (United Nations Information Technology Services), [online] www.unites.org
21. The Digital Opportunity Initiative, [online] www.opt-init.org
22. World Economic Forum. Global Digital Divide Initiative, [online] www.weforum.org/site/homepublic.nsf/Content/Global+Digital+Divide+Initiative
23. World Bank. Infodev Programme, [online] www.infodev.org.
24. World Bank, WorLD (World Links for Development) Programme, [online] www.worldbank.org/worldlinks.
25. Aidsweb. Using ICT to combat HIV/AIDS, [online] www.worldbank.org/worldlinks/aidsweb.
26. The Health Internetwork, [online] www.healthinternetwork.org
27. Center for International Development. Harvard University, USA. http://www.cid.Harvard.edu
28. Towards A Global Partnership In The Information Society: EU Perspective In The Context Of The United Nations World Summit On The Information Society (WSIS). European Commission (COM(2003) 271 final), Mayo 2003.

29. Report on the Commission communication on Health and Poverty Reduction in Developing Countries COM(2002) 129 – C5-0334/2002 – 2002/2178(COS). Committee on Development and Cooperation, European Parliament, (A5-0217/2003), June 2003.

30. Report on Information and Communication Technologies (ICT) and developing countries(2000/2327(INI)). Committee on Development and Cooperation, European Parliament,(A5-0191/2001), May 2001.

31. 2nd Update on the Implementation of the DOT Force Genoa Plan of Action. February 2002.

32. DOT Force Implementation Phase. The Way Forward. Report on the conclusions of the organizational meeting of the DOT Force Implementation Teams, Montreal, Canada, October 9-10, 2001

33. Okinawa Charter on Global Information Society. DOT Force.

34. DOT Force (Genoa) Plan of Action: Framework for Implementation ."To foster an environment of sustainable social and economic development (including poverty alleviation)"

35. The Information Society and Development. A Review of the EC´s experience in Asia, Latin America and the Mediterranean. DG External Relations, European Commission (ER/04 Economic Analysis), January 2001.

36. Guidelines for European Commission Support to ICT and Development. EuropeAid Cooperation Office, European Commission, June 2003.

37. The Little fish Project. http://www.littlefish.com.au/lfproject/intro/lfhome.htm http://resmedicinae.sourceforge.net/

38. Périn, I. *Scaling up of Development Aid in Health Perspectives for the European Community*. Center of International Development, Kennedy School, Harvard University, November 2001.

39. Périn, I. Spotlight on the European Commission Development Aid and Health. Takemi Programme, Harvard School of Public Health, June 2001.

40. Chandrasekhar, C.P. and Ghosh, J. *ICT and Health in low income countries: the potential and the constraints.* Bulletin of the WHO 2001, 79:850-855.

41. The World Health Report 2002: Reducing risks promoting healthy life. World Health Organization.

42. The State of World Population 2003 Report. UNFPA.

43. European Parliament Resolution on access to drugs for HIV/AIDS victims in the Third World. European Parliament (OJ C343/300), December 2001.

44. Poverty Reduction. European Parliament (OJ C 87 E/159), April 2002.

45. Poverty Reduction. European Parliament (OJ C 87 E/244), April 2002

46. The ACP-EU Joint Parliamentary Assembly. European Parliament (OJ C231/20), September 2002.

47. Health and Poverty Reduction in Developing Countries. European Commission (COM (2002) 129 final), March 2002.

48. Development Policy. European Parliament (OJ C277/130), October 2001.

49. Towards a New Asia Strategy. European Commission (COM (94) 314 final), July 1994.

50. Health-for-all policy for the twenty-first century. Fifty-first World Health Assembly, (WHA51.7), May 1998.

51. Wijkman, A. *Bridge the digital divide*. Europe´s Forum on International Cooperation, July 2000.

52. *Declaration of Principles*. World Summit on the Information Society (WSIS-03/GENEVA/DOC/0004), December 2003.

53. *Plan of Action*. World Summit on the Information Society (WSIS-03/GENEVA/DOC/0005), December 2003.

54. *Report of the Geneva phase of the World Summit on the Information Society*. World Summit on the Information Society (WSIS-03/GENEVA/9(Rev-1)), February 2004.

C.1.3   Bibliography and References

1. **Telecommunication Indicators Handbook**. International Telecommunication Union (ITU). Geneva.
   Full text available at:
   http://www.itu.int/itu-d/ict/publications/world/material/handbook.html (accessed on 31/07/03).
   (Size 75722 bytes - 3/18/2003 6:44:29 AM GMT).
   Contents: Foreword 1. Introduction 1.1 Public telecommunications sector indicators 1.2 Reporting period 1.3 Demographic and macro-economic data 1.4 Derived indicators 1.5 Aggregated indicators 1.6 Telecommunications organisations 1.7 Telecommunications services 2. Definitions. Bibliography. Annexes.

   The handbook identifies and defines the most important indicators useful for analysing the public telecommunication sector. It includes Telecommunication networks that anyone can subscribe, but excludes equipment manufacturing and broadcasting. The 50 listed indicators are classified in 8 main groups: Telephone network size and dimension, Other services, Quality of service, Traffic, Tariffs, Staff, Revenue and costs, and Investment.

   This organisation offers an **ITU Telecommunication Indicators Mailing List**, in order to receive email updates when new publications are added to the Telecommunication Indicators site. (Send an email message to majordomo@itu.int with the phrase subscribe to in the body of your message).
   http://www.itu.int/itu-d/ict/mailinglist.html
   size 6472 bytes - 3/18/2003 6:44:00 AM GMT

2. Eysenbach, G. and Jadad, AR. Evidence-based Patient Choice and Consumer Health Informatics in the Internet Age. Journal of Medical Internet research 2001;3(2):e19. URL:http://www.jmir.org/2001/2/e19/ (accessed on 01/08/03).

   Includes a very good description and discussion on the barriers, found by citizens/patients and health professionals, when accessing health information.

3. Rodrigues, RJ. and Risk, A. eHealth in Latin America and the Caribbean: Development and Policy Issues. Journal of Medical Internet Research 2003;5(1):e4. URL:http://www.jmir.org/2003/1/e4 (accessed on 01/08/03).

4. Measurement of the impact of Information and Communications Technology (ICT) in rural and remote areas. International Telecommunication Union. BDT Study Group 2-Question 10 f.
   URL:http://www.itu.int/ITU-D/univ_access/studygroups/Q10f.html (accessed on 01/08/2003).

   Description of a Study Group of the ITU whose expected output will comprise an evaluation methodology and a set of "key indicators" that can be used to assess and describe the direction and rate of change of economic, social and cultural development of the area reported upon.

5. Asia-Pacific Telecommunication Indicators 2002. ITU. Geneva, December 2002. Summary available at: URL:http://www.itu.int/ITU-D/ict/publications/asia/2002/index.html (accessed on 01/08/03).

   5th edition of the ITU series on these region indicators for telecommunications in general. The abstract gives some clues about current developments and facts.

6. Americas Telecommunication Indicators 2000. ITU. Geneva, April 2000. Executive Summary available at: URL:http://www.itu.int/ITU-D/ict/publications/americas/2000/index.html (accessed on 01/08/03).

   The report was prepared for an exhibition and forum taking place in Rio de Janeiro, Brazil, on April 2000. The executive summary gives clear ideas not only on facts, but also on trends, presenting some statistics on key indicators to illustrate the messages. It includes comments on regulation and performance evaluation.

7. Silber, D. The Case for eHealth. European Institute of Public Administration. European Commission. Maastricht, 2003. ISBN 90-6779-180-6.

   Independent report prepared and presented at the European Commission's first high-level conference on eHealth, May 22/23 2003, at Brussels. It represents the most recent analyses of European Best Practices on eHealth.

C.1.4   Annexes

HEALTH AND ICT IN DEVELOPING COUNTRIES

ANNEX I
DONOR INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) STRATEGIES. AS COLLECTED BY THE OECD/DCD
(February 2003)

I. DAC MEMBERS			
Donor	**Guiding Principles/Objectives**	**Programmes**	**Areas of Application**
AUSTRALIA	In 2002 Australia announced a new policy framework for its official aid program that includes as one of five guiding themes, assisting developing countries access and maximise the benefits from new information technologies		Specific areas of application include health
CANADA	**INTERNATIONAL DEVELOPMENT RESEARCH CENTER's** programme in ICT for development is based on the understanding that these technologies have enabling impacts on health, education, governance, employment, resource management and enterprise.		Specific areas of application include ICT for health
	THE CANADIAN INTERNATIONAL DEVELOPING AGENCY. Use the UN Millennium Development Goals limited to ensure ICT programming targets the poor Use the full range of technologies available as appropriate - from low technology (radio) to high technology (Internet, e-commerce)	Programming should focus on, but not be limited to (among others) using ICT as tools for development of the education and health sectors, in particular, the control and prevention of HIV/AIDS and other communicable diseases;	
	INDUSTRY CANADA By facilitating the exchange of information and knowledge, by helping deliver education and **health services**, by stimulating civil society participation in a country's democratic process, and by helping small and large businesses explore new markets, ICT greatly contribute to global social and economic enrichment.	Health among its objectives but no programme concerning health itself.	
EUROPEAN COMMISSION	While ICT are not be seen as a priority sector as such for Community development cooperation, they do provide an important tool for more efficient and effective aid delivery and need to be recognised as an increasingly important element in the economic and social fabric of countries world-wide.	Asia IT&C: co-financing partnerships in ICT Eumedis in the Mediterranean Region @LIS in Latin America @CP-programme is being designed for the Africa-Caribbean-Pacific countries.	Further EC action will take place within the context of the new EC development policy, and its six priority sectors with an overall focus on poverty reduction, among them **equitable access to social services**
GERMANY (UE)	DEUTSCHE GESELLSCHAFT FÜR TECHNISCHE	The GTZ is engaged in a number of small-scale pilot	

I. DAC MEMBERS			
Donor	Guiding Principles/Objectives	Programmes	Areas of Application
	ZUSAMMENARBEIT (GTZ)	projects to test and evaluate the integration of ICT in rural development, small and medium enterprises, telecentres, **health** and education. Particular attention is being paid to the development of public private partnerships with the private sector.	
GREECE (UE)	MINISTRY OF HEALTH	Medical Equipment Purchase	Medical Services
	MINISTRY OF ECONOMY/UNIVERSITY OF THESSALONICA	Telemedicine laboratory equipment	Basic Health Infrastructure
JAPAN	MINISTRY OF FOREING AFFAIRS	**Grant Aid for IT** projects: 6.5 billion yen for construction of telecommunication infrastructure facilities for remote education and **telemedicine**.	
	JAPAN INTERNATIONAL COOPERATION AGENCY		Specific areas of application include ICT for health
	JAPAN BANL FOR INTERNATIONAL COOPERATION	JBIC will conduct studies and planning on how IT may be used in various sectors, including poverty reduction, education, **public healthcare**, and the environment.	
NEW ZEALAND	New Zealand Agency for International Development (NZAID) intervenes almost exclusively in the ICT sector through the promotion of access to distance education and open learning. It also supports ICT use for health **delivery**, participatory government and strengthening civil society's role in governance mechanisms.		Specific areas of application include **health**
UNITED STATES	The ICT4D strategy has five components, among them the application in education, **health**, economic growth, resource management, etc.	Global **Health** Bureau has developed an interactive CD-ROM-based computer program that teaches **health** workers how to care for ill children.	Specific areas of application include **health**

II. MULTILATERAL AGENCIES			
Donor	**Guiding Principles/Objectives**	**Programmes**	**Areas of Application**
INTER-AMERICAN DEVELOPMENT BANK			Specific areas of application include **health**
INTERNATIONAL TELECOMMUNICATION UNION	ITU-D's goal is to assist developing countries in harnessing the potentials of ICT to contribute towards reducing social divide, **improving the quality life**, promoting universal access and facilitating entry into the information society.		**Health** is included. Specific working group on development and telemedicine
UNITED NATIONS CONFERENCE ON TRADE DEVELOPMENT			
UNITED NATIONS DEVELOPMENT PROGRAMME	to create an environment that enables the use of ICT in all sectors of human activities		The practices areas of UNDP, in addition to ICT for Development, are democratic governance, poverty or reduction, crisis prevention and recovery, energy and environment, and HIV-AIDS
UNITED NATIONS ECONOMIC COMMISSION FOR AFRICA			Specific areas of application include, within a sectorial programme, **e-health**
UNITED NATIONS INFORMATION TECHNOLOGY SERVICES	UNITeS is an initiative that the UN Secretary-General announced in his Millennium Report. Among its 3 primary goals: • Improve the capacity of individuals and institutions in developing countries to make practical use of ICT in their development processes, through the cooperation of volunteers from all around the world. • Establish a significant knowledge base/network on applications of ICT to various areas of human development (e.g., support to small and medium enterprises, **health**, education, governance, gender		Specific areas of application include **health**

II. MULTILATERAL AGENCIES			
Donor	**Guiding Principles/Objectives**	**Programmes**	**Areas of Application**
	equity, environment) and humanitarian aid. • Promote ICT volunteering in development initiatives and organizations,		
WORLD HEALTH ORGANISATION	The *Health InterNetwork* brings together international agencies, the private sector, foundations, non governmental organizations and country partners the principle of ensuring equitable access to **health** information. The aim is to improve public **health** by facilitating the flow of **health** information, using the Internet. **Health** information - relevant, timely and appropriate - must become unrestricted and affordable worldwide, so that all communities can benefit from this global public good.	Launched by the Secretary General of the UN in September 2002 and led by the WHO, the *Health InterNetwork* has brought together public and private partners under the principle of ensuring equitable access to **health** information. The core elements of the project are content, Internet connectivity and capacity building. Through the *Health InterNetwork* Access to Research Initiative (HNARI) the **Health** Inter- researchers Network provides a vast library of the latest and best information on public **health**: more than 2,000 scientific publications, one of the world's largest collections of biomedical literature. *Health InterNetwork* training concentrates on building the skills needed to put information into action: information access and use in daily work, basic computer and internet skills, and hands-on training to use specialised public **health** information, literature and tools. Training has begun with sessions with sessions in 2002 in Tanzania, Mozambique, Geneva and Lyon. The **Indian demonstration project** aims to support tuberculosis and tobacco control programs throughout the country. An initial **health** information needs assessment was carried out in 7 distrICT to give a broad overview of **health** information needs. Developed in India by a core team consisting of government, private sector and technical program staff, the project will contribute to filling gaps in the **health** research information system, support electronic publishing of related Indian journals and reports, and facilitate the network of medical libraries.	Scientific (biomedical) publications Health Policy and Practice Statistical Data Training and Courses IT health toolkit The *Health InterNetwork* targets health care professionala, researchers and policy makers in developing countries (no regional focus)

ANNEX II
ICT IN NATIONAL DEVELOPMENT PLANS (NDP) AND IN POVERTY REDUCTION STRATEGY PAPERS (PRSPS)IN SOME DEVELOPING COUNTRIES

	ICT in National Development Plans as February 2003		ICT in Poverty Reduction Strategy Papers (PRSPs)	
Country	ICT component/s (Y/N)	How is ICT referred in NDP or existing NICI	ICT component/s (Y/N)	How is ICT referred in PRSP
Albania			Yes	"Modernization of Information Technology" is listed as one of the most critical 7 long-term development goals for a transitional period towards market economy in Albania.
Algeria		Has a National Policy and a National Strategy Several sectoral implementation strategies are being developed		
Bangladesh	Yes	Bangladesh Government established 'ICT Policy of Bangladesh' in September 2002. ICT Policy of Bangladesh: http://www.bccbd.org I-PRSP of Bangladesh: http://www.erdbd.org/iprsp/iprsp.jsp		
Benin		The Communication and Information Infrastructure Development Plan of Benin: 2000-2004 was approved in 2000. In August 2002, the Ministry of Communications and Promotion of New Technologies published the National Information Policy and and Strategy document "Bénin 2025: une société de l'information solidaire, épanouie et ouverte". The document envisions an open and interdependent information society in Benin by the year 2025.		
Bolivia	Yes	In Bolivia, there is a significant "digital gap" between the urban and rural residents. In order to mitigate the gap, the Bolivian government created FUNDETIC (National Foundation of Information and Communication Technology) in 2001, but its result is yet to be observed. Within Bolivia's PRSP, information technology (IT) is expected to reduce poverty by reducing the corruption and increasing the government's efficiency through establishing an information network that will connect all the government bureaus, local governments.	No	"Rural telecommunications development" is simply mentioned as a means of poverty reduction in the poorest areas, but not as a priority goal or a strategic component of PRS/national development plan.

	ICT in National Development Plans as February 2003		ICT in Poverty Reduction Strategy Papers (PRSPs)	
Country	**ICT component/s (Y/N)**	**How is ICT referred in NDP or existing NICI**	**ICT component/s (Y/N)**	**How is ICT referred in PRSP**
Brazil	Yes	"Improvement of quality for communication services" is mentioned in the Brazilian Plural Plan (2000-2003) for the equal distribution of the opportunity of productive investment to all the regions.		
Burkina Faso			No	Not covered Just the necessity of retrenching state monopoly in the telecommunications sector was indicated in the section on industrial development The Information and Communication Infrastructure Development Plan of Burkina Faso: 2000-2004 approved in October 2000
Burundi		The Cabinet adopted the National Strategy for the Development of Information and Communication technologies in Burundi in 2002. The document is being circulated for wide dissemination and consultations before implementation.		
Cambodia	Yes	As evidence that Cambodia is fully aware of the importance of ICT, the National Information Communications Technology Development Authority (NiDA) chaired by Prime Minister was established on 23 August 2000. The responsibilities of this authority are to formulate IT promotion and development policy for the short, medium and long term, to implement IT policy to ensure maximum economic growth, and to monitor and audit all IT-related projects in Cambodia. See http://www.nida.gov.kh/ .		
Cameroon		The draft NICI plan was finalized in October 2001. The Government has announced the creation of a High Authority in charge of ICT issues in Cameroon		
Cape Verde		The NICI plan development process finalized in October 2000. A National Information and Communication Technologies Infrastructure Development Plan was the product of the process. An implementation strategy is being developed.		
Central African Republic.		The process of the elaboration of the National Strategy started in January 2002. A baseline study was undertaken in June/July 2002. The new Government wants to continue the process by holding a national workshop to validate and elaborate the draft NICI plan		

	ICT in National Development Plans as February 2003		ICT in Poverty Reduction Strategy Papers (PRSPs)	
Country	ICT component/s (Y/N)	How is ICT referred in NDP or existing NICI	ICT component/s (Y/N)	How is ICT referred in PRSP
Chile	Yes	A report by the Presidential Commission on New Information and Communication Technologies in 1999 sparked a national debate to map out a course for Chile to confront the technological revolution and promote IT as a new strategic pillar of national development. (The report is available at: www.minecon.cl/economiaweb.nsf/0/DE41ED7418FEFF0204256CB0004FB9FE?OpenDocument) Achievements in 2000-2002 include a program of info centres and rural telecommunications (www.gobiernodechile.cl), rural microcenters and classrooms (www.redenlaces.cl), and upgrading numbering system for mobile phones. As part of the Reform of Public Services various institutions have started the operation of services on line, for example, www.comprachile.cl for public purchases and http://www.tramitefacil.gob.cl to offer information about public procedures.		
China	Yes	The 10th Five-Year Plan (2001-2005) attaches great importance to speeding up the development of the IT industries. It says that the promotion of the application of information technology is the key to upgrading China's industrial and modernization.		
Côte d'Ivoire		The NICI Plan was approved by the Council of Ministers in July 2000. A Ministry of Information and Communication Technologies was created to implement the NICI Plan. Priority projects were identified for implementation; however, due to political instability, the process is stalled		
Djibouti		The National ICT Strategy and its accompanying Action Plan were adopted by the Council of Ministers of the Government of Djibouti in April 2003. Over 30 projects have been detailed in the action plan for implementation		
Egypt	Yes	According to The Fifth Five-Year Plan for Socio-Economic Development (2002-2007) of Arab Republic of Egypt, the government of Egypt has the strategy in the field of ICT to expand the utilization of		

	ICT in National Development Plans as February 2003		ICT in Poverty Reduction Strategy Papers (PRSPs)	
Country	ICT component/s (Y/N)	How is ICT referred in NDP or existing NICI	ICT component/s (Y/N)	How is ICT referred in PRSP
		mobile phones by establishing a third network. It also targets to expand the establishment of information centers. Implementation of many projects for the development of ICT industries and the advent of universal access. Establishment of the Ministry for Telecommunications and Information in 1999. In its efforts to translate into a reality the goal of creating an Egyptian Information Society, the Ministry of Communications and Information Technology has proposed the National Plan for Communications and Information Technology		
Ethiopia		The Draft National ICT Policy document has been adopted by the Council of Ministers. The first cycle of the implementation plan covering the period 2003-mid 2008 is ready. A national ICT Coordinating Office is being established to manage the implementation process, monitoring and evaluation.	No	(1) "Importance of telecommunications for rural development" was indicated. (2) In one of the action programmes ("Justice System Reform Program") in the appendix, "upgrading IT skills of people working for the Parliament and Judiciary" was set as a target.
Gabon		A Development Plan based on the Network for sustainable development was finalized in 2000. Consultations were held in 2002 with all stakeholders to update the plan. Infrastructure development is the main focus of the plan		
Gambia			Yes	ICT is not the first priority, but one of main components of infrastructure setup and capacity building; both are indispensable for PRS.
Ghana	Yes	ICT is described as a means of improvement in "Production and Employment" on which Ghana's Poverty Reduction Strategy focused as one of the five thematic areas to intervene. The NICI development process revived in 2002 and is still underway. The policy document was submitted to the Government in July 2003. The NICI Plan should be completed by December 2003. The Government wants to put a mid- and long-term strategy for ICT development in place.		
Guinea			No	Just a general thought on how to cope with an international trend of IT development is mentioned under "Communications

	ICT in National Development Plans as February 2003			ICT in Poverty Reduction Strategy Papers (PRSPs)	
Country	ICT component/s (Y/N)	How is ICT referred in NDP or existing NICI	ICT component/s (Y/N)	How is ICT referred in PRSP	
				and Culture Strategy in the Poverty Reduction Context" in the appendix.	
Guyana			No	Only (1) the fact that lack of scientific and IT-related laboratories seriously contributed to the low performance of students in the educational sector; and (2) the need of promotion of IT-related exports were introduced.	
Honduras	No	Only minor references to the necessity of (1) more private investment in the telecommunications service, (2) better position in the telecommunications market, and (3) improvement of access to the telecommunications service. http://www.sdp.gob.hn/plan%20Gobierno.htm (Spanish only)	No	Almost no mention. Just the necessity of (1) rural telecommunications development, and (2) privatisation of public utilities sector referred to.	
India	Yes	The 10th Plan Document is available at the Planning Commission Website (PDF Format), at the following URL: http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html ICT figures prominently in Volume-II, under the heading "Human and Social Development". ICT is specially recommended as a strategy for: 1 Adult Literacy / National Literacy Mission, 2 Teacher Training, professional development of Educators, Managers and others, 3 Secondary Education, 4 Higher and Technical Education			
Indonesia	Yes	(1) Development and improvement of "Information, Communication and the Mass Media" is specified as one of key development components in the Political Field. (2) Facility and infrastructure (include communication) building is referred as one of development program elements in the Economic field. Reference Web Site: www.bappenas.go.id/html/inggris/info.asp			

	ICT in National Development Plans as February 2003		ICT in Poverty Reduction Strategy Papers (PRSPs)	
Country	**ICT component/s (Y/N)**	**How is ICT referred in NDP or existing NICI**	**ICT component/s (Y/N)**	**How is ICT referred in PRSP**
Jordan	Yes	Under the slogan "Jordan will become the ICT hub in the region" His Majesty King Abdullah II declared his strong vision and commitment for ICT to play a key role in the national development strategy in Jordan.		
Kenya	Yes	In "National Development Plan 2002 - 2008", Chapter 9 is devoted to ICT. They are recognized as the foundation of modern economic development. The plan refers to development of ICT infrastructure, provision of the e-enabling environment, capacity building and improvement of public service delivery through ICT. The process of a comprehensive national strategy based on a broad national consultation started in 2001. The new Government has started re-engineering the NICI development process. Major partners are supposed to get involved to start the process in September 2003		
Malawi			No	"Utilization of IT infrastructure" was given the lowest priority among activities for "Development Goal 5.4 - Create a Science and Technology driven economy."
Malaysia	Yes	"Expanding the Usage of Information and Communications Technology" is listed as one of the key strategies of 8th Malaysia Plan (2001-2005). Separate document - National Information Technology Agenda (NITA): http://www.nitc.org.my/index.shtml		
Mauritania			No	As one of the mid-term economic development goals, promotion of services sector, which should continue to expand because of sustained and significant private investment in tourism, telecommunications, and trade, is stressed. However, there is no direct relationship explained, as in some other countries' PRSPs, between IT development and poverty reduction strategies. National Information and Communication Infrastructure

	ICT in National Development Plans as February 2003			ICT in Poverty Reduction Strategy Papers (PRSPs)	
Country	ICT component/s (Y/N)	How is ICT referred in NDP or existing NICI	ICT component/s (Y/N)	How is ICT referred in PRSP
				Development Plan: 1999–2002. The plan is being updated. The Government has created "le Secrétariat d'État aux technologies de l'information et de la communication" to review the NICI plan and to promote ICT
Morocco		A national IT policy 1999-2003 elaborated and approved for implementation in 1999 by the Government Several implementation strategies, programmes and projects were put in place		
Mozambique			Yes	Technological enhancement is placed as a stimulus for encouraging foreign direct investment and IT development is introduced as a programme of complementary measures.
Namibia		The Information and Communication Technology Policy was adopted in June 2003. The NICI plan will be finalized by December 2003		
Nepal	Yes	ICT is listed as one of the important factors in the Nepal's PRSP in terms of its potential for the Broad-based Economic Growth. In 2000, His Majesty's Government of Nepal (HMGN) has established "Information Technology Policy", which has three main objectives; (1) to make information technology accessible to the general public and increase employment through this means, (2) to build a knowledge-based society, and (3) to establish knowledge-based industries. Currently, a draft Cyber Law is in discussion . Please refer the following: http://npc.gov.np:8080/ National Planning Commission Home Page from which the draft PRSP can be down-loaded. http://www.most.gov.np/ Ministry of Science and Technology, which is the national machinery for ICT		
Nicaragua			No	Telecommunication issues are discussed only in sections on (1) rural development (necessity of infrastructure) and (2) public sector reform.
Niger			No	The official launching of the NICI policy development process in Niger took place in August 2002 The baseline study has been completed and the sectoral studies are being undertaken. The

65

	ICT in National Development Plans as February 2003		ICT in Poverty Reduction Strategy Papers (PRSPs)	
Country	ICT component/s (Y/N)	How is ICT referred in NDP or existing NICI	ICT component/s (Y/N)	How is ICT referred in PRSP
				first validation workshop will be held in September 2003
Nigeria		The Nigerian Information and Communication Technology Agency (NICTA) formulated a Nigerian National Policy for Information Technology (IT) after consultations with stakeholders in 2000. NICTA has been undertaking a series of activities in the framework sensitization and training of high-level decision makers including Permanent Secretaries and Director Generals of Government Departments. A National Strategic NICI Planning Committee of 23 members was set up and inaugurated on 7 August 2003 with membership from all stakeholders		
Philippines	Yes	The Medium Term Philippine Development Plan (comprehensive national development plan of the Philippines), includes 'IT21' as the IT master plan, whose goal is to make the Philippines "Knowledge Center in Asia" by 2010. Furthermore, there are two more national plans relevant to IT. Promotion of e-commerce is focused in Internet Strategy for the Philippines (ISP.com). And the Government Information Systems plan sets a goal of 2010 to achieve efficiency of all the governmental activities as well as administration services through e-government.		
Rwanda			Yes	The Government of Rwanda recognises the role that Information Communication Technology (ICT) can play in accelerating the socio-economic development of Rwanda towards an information and knowledge based economy.
Senegal	*Yes*	The 10th National Development Plan, which covers 2002-2007, is still under preparation. The present draft addresses ICT as a means to reinforce the capacity in order to close the gap with the northern countries. And it also sets strategic orientation to promote information for development and to favour utilisation of results of research into ICT.	No	The Government admitted the importance of implementation of/catching up with new information technologies and telecommunication tools for the nation's sustainable economic growth.
South Africa		The South Africa IT Strategy Project (SAITIS) was developed by the Department of Trade and Industry and the Department of		

	ICT in National Development Plans as February 2003			ICT in Poverty Reduction Strategy Papers (PRSPs)	
Country	ICT component/s (Y/N)	How is ICT referred in NDP or existing NICI	ICT component/s (Y/N)	How is ICT referred in PRSP	
		Communication, in consultation with the private sector and other stakeholders. The implementation has started and covers all sectors. A Presidential Advisory Committee was put in place to oversee implementation and ensure coordination			
Sri Lanka	Yes	ICT action plans are included in "The Future - Regaining Sri Lanka", reflecting "A Framework for Poverty Reduction" and "e-Sri Lanka : An ICT Development Roadmap". (The Future - Regaining Sri Lanka http://www.regainingsrilanka.org/) (e-Sri Lanka : An ICT Development Roadmap http://www.esrilanka.lk/)			
Sudan		Preparations were underway in 1999 to elaborate the National Information and Communication plans for Sudan. Since then a National ICT Strategy has been formulated. The National Information Centre was put in place in 2002 to implement and promote ICT in the Government departments			
Tajikistan			No	New information technologies are considered to be indispensable tools for social development (education & health sectors). And modernization of telecommunications is also regarded as a necessary condition for agricultural development especially in terms of having access to market information for producers.	
Tanzania	Yes	In Vision 2025, ICT is indicated to be central to a competitive social and economic transformation and a driving force for the realization of the Vision. The national ICT policy is under preparation.	No	Not at all discussed.	
Thailand	Yes	IT2010 is a national IT policy framework which will be used as a blueprint for ICT development during 2001-2010. Five strategic IT applications are highlighted in IT 2010 as follows: e-industry, e-commerce, e-education, e-society, and e-government. In addition, there is an ICT Master Plan, which provides a strategic framework for implementation during 2002-2006.			

	ICT in National Development Plans as February 2003		ICT in Poverty Reduction Strategy Papers (PRSPs)	
Country	ICT component/s (Y/N)	How is ICT referred in NDP or existing NICI	ICT component/s (Y/N)	How is ICT referred in PRSP
Tunisia	Yes	Affirming that promoting ICT is necessary to guarantee a social and economic development, Tunisia is determined to create all the necessary conditions for a positive interaction with the technological world in constant evolution.		
Uganda	No	Not at all discussed	No	Not at all discussed.
Vietnam	Yes	(The 7th national socio-economic development plan, 2001-2005) The Plan mentions the necessity of developing ICT related Industries. The latest separate document "Master Plan for Information Technology Use and Development in Vietnam by 2005" was approved in 2002.	No	Information Technology is regarded as a tool to support public administration reform, and is brought up as part of specific tasks of socio-economic development.
Yemen			No	Not at all discussed.
Zambia			No	Almost not at all discussed (telecommunication development is considered to be one of components of infrastructure setup needed for establishing sustainable & competitive industrial environment).

NICI = National Information and Communication Infrastructure Strategies [21]

---

[21] E-Strategies. National, Sectoral and Regional ICT Policies, Plans and Strategies. Sub-committee on Information and Communication Technology: ICT and Governance. Economic Commission for Africa

ANNEX III : SUCCESS STORIES PER REGION

SUCCESS STORIES: LATIN AMERICA					
Reference Countries	**Organization**	**Key Initiative**	**Specific Project**	**Goal**	**Abstract**
Bolivia.	ITU: International Telecommunication Union.		E-Health.	Treat Cancer. Cancer.	The constant flow of information throughout the world has made it easier for physicians to diagnose a variety of illnesses and identify new treatments for a multitude of diseases. This information, which is collected in massive databases, has given both physicians and patients access to more information about health improvement and risk assessment. The Bolivian Familial Cancer Database is one such international database that allows physicians to compare and contrast tumor and non-tumor features of a person's genetic makeup with existing database entries. This interactive database already contains over 300 entries and is updated regularly. Another similar site administered by Harvard University allows users to calculate their risk of getting cancer free of charge. Overall, ICT and access to the global information network are allowing citizens around the world better prepare for and treat cancer and other illnesses. For additional information visit http://www.itu.int/ITU-D/ict/cs/bolivia/bolivia.html.
Bolivia. Ecuador. Jamaica.	IICD: International Institute for Communication and Development.			Assists developing countries to realise locally owned sustainable development by harnessing the potential of information and communication technologies (ICT).	Introduction: The International Institute for Communication and Development (IICD)assists developing countries to realise locally owned sustainable development by harnessing the potential of information and communication technologies (ICT). IICD works with its partner organisations in selected countries, helping local stakeholders to assess the potential uses of ICT in development. We also strengthen the capacities of our local partners

SUCCESS STORIES: LATIN AMERICA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
					to formulate, implement and manage development policies and projects that make use of ICT. In which sectors are we active?: Our philosophy is that ICT are tools that can contribute to sustainable development and poverty alleviation. However, this only applies when ICT are supporting existing development activities. Therefore, we focus on 'traditional' development sectors, such as education, good governance, health, livelihood opportunities (especially agriculture)and environment. Where do we work?: Currently, we are active in 9 countries: Bolivia, Burkina Faso, Ecuador, Ghana, Jamaica, Mali, Tanzania, Uganda and Zambia. Background: IICD is an independent non-profit foundation, established by the Netherlands Minister for Development Cooperation in 1997. Its sources of core funding are the Directorate-General for Development Cooperation (DGIS), the UK Department for International Development (DFID)and the Swiss Agency for Development Cooperation (SDC).
Caribbean countries.	HIN: Health InterNetwork.			Public health distance education Childhood pneumonia. Chagas' disease. HIV/AIDS.	Pilot projects in other WHO Regions include the Caribbean Islands pilot to test the cost, logistics and feasibility of providing public health distance education in 5 sites; a pilot in Bolivia to address major health problems of childhood pneumonia and Chagas' disease, and a joint project with UNAIDS in countries with high HIV/Aids prevalence. Each pilot study is outlined through a document detailing objectives, milestones, expected outcomes (impact on indicators)and supporting budget. The cost for each pilot implementation, covering Internet connectivity installation and support, training, and

SUCCESS STORIES: LATIN AMERICA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
					local content publishing, one-year operation and evaluation is budgeted at between US$750,000-$1M, subject to the local capacity of the host authorities and the private sector.
Developing countries Peru	European Commission		EHAS Programme		It has developed a range of low-cost telecommunication systems and information services solutions, specially designed for rural primary health personnel of isolated areas in developing countries. The initial collaboration was undertaken by the Polytechnic University of Madrid, and Engineers without Frontiers, a Spanish NGO, for the benefit of communities living in the Peruvian jungle.
Developing countries	University of Pittsburgh		Supercourse		Under the leadership of Prof. Ron LaPorte from the University of Pittsburgh, an impressive international collaboration has been put in place. More than 1,000 lectures, in easily accessible electronic format are available for free, on a very broad range of subjects related to prevention, epidemiology and public health. Almost 10,000 faculty from 134 countries, have contributed with the lectures, covering 8 languages.
Developing countries	World Bank			Gender and ICT	This study is designed to provide guidance on the design of gender-responsive ICT policies and interventions for project managers, planners, and policy makers around the world, including World Bank staff. Such gender-responsive actions should enable developing countries to improve the efficiency and equity of their ICT policies and programs by ensuring that they respond to the needs of both men and women. Study objectives will be accomplished through the following activities: • Review of existing ICT and knowledge economy

PE 338.697

SUCCESS STORIES: LATIN AMERICA					
Reference Countries	**Organization**	**Key Initiative**	**Specific Project**	**Goal**	**Abstract**
					projects funded by the World Bank to assess their incorporation of gender-responsive analysis and actions • Research to develop indicators of women and ICT in developing countries • Global analysis, through interviews and a literature review, of gender issues and the inclusion of women in ICT and knowledge economy projects.
Latin America			Informedica		An experience of on-line congress and professional journal, intended for the benefit of health professionals (doctors, nurses and others), especially in Latin America. The low-cost of taking part (free for anyone with an Internet access), facilitated the participation of many people interested in keeping up with current developments in their profession and continued education. The Informedica congress brought together 6,000+ virtual participants.
Latin America and Caribbean countries.	PAHO: Pan American Health Organization.		BIREME.	Technical cooperation in health scientific.	In addition to the objectives that can be attributed to the Center by resolution of the Pan American Health Organization's Governing Bodies, BIREME's objective is to stimulate technical cooperation in health scientific and technical information among Latin American and Caribbean countries (the Region), in order to develop the means and capacities for providing equitable access to all relevant and up to date health scientific and technical information on a fast and efficient basis, and at reasonable costs.
Latin America and Caribbean countries.	PAHO: Pan American Health Organization.		BIREME.	Technical cooperation in health scientific.	The Health Information Locator (LIS)is the Virtual Health Library portal which contains the catalogue of information sources on health sciences available on Internet and selected with quality criteria. The

SUCCESS STORIES: LATIN AMERICA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
					LIS record describes the content of these information sources and includes the respective links to them. The LIS methodology is the result of technical cooperation between the Centro Nacional de Informaci¾n de Ciencias MÚdicas (CNICM), Red Telemßtica de Salud en Cuba (INFOMED)and BIREME. The LIS methodology follows currently accepted standards and formats adopted internationally by libraries and documentation centers to describe information sources on the Internet. It is based on the GILS (Global Information Locator Service)and the Dublin Core formats, with some additional data fields.
Latin America and Caribbean countries.	PAHO: Pan American Health Organization.		Virtual public health campus.	Public health.	The Pan American Health Organization (PAHO), in association with 14 academic institutions in the Americas and Spain, launched a Virtual Public Health Campus today as a tool to provide continuing education to public health personnel in the Americas, offering a variety of distance education courses to contribute to public health policy-making and to the performance of health systems in the Region. The Virtual Campus of Public Health is a virtual community offering communication exchanges to generate useful knowledge, training and debate between individuals and institutions on priority issues related to health sector reform processes and the management of essential public health functions, as well as health management and the institutional development of schools of public health.
Latin America and Caribbean countries.			Physician-Based Sentinel Surveillance System for Emerging		The Project, utilising current and new technologies in information and communication, develops national capability in Caribbean countries for

SUCCESS STORIES: LATIN AMERICA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
			Health and Disease problems in the Caribbean		monitoring trends, and the prompt detection, investigation and control of emerging (e.g. cholera) re-emerging (e.g. measles, food borne outbreaks in hotels) health problems. An electronic information system for the real time surveillance of emerging and re-emerging health and disease problems is being established at physician's offices, in Trinidad & Tobago, Jamaica and St. Lucia. The data is also being used to monitor the effect of the interventions. The project strengthens the Caribbean College of Family Physicians (CCFP), an NGO, and both in general and specifically through enhanced distance education.

SUCCESS STORIES: CENTRAL AND EASTERN EUROPE					
Reference Countries	**Organization**	**Key Initiative**	**Specific Project**	**Goal**	**Abstract**
Development countries.	OSI: Open Society Institute.	HIN: Health InterNetwork.	Policy Reform.	Health Care Sector Reform.	The Network Public Health Programs support efforts to encourage the development of health policies and services based on public health principles, evidence, and best practice, rather than on entrenched interests and tradition. Health Care Sector Reform.The Public Health Programs partner with the governments of Spain, Norway, and Greece, the WHO, World Bank, European Investment Bank, and the London School of Hygiene and Tropical Medicine in the European Observatory on Health Care Systems. The Observatory sponsors and disseminates research on health sector organization and performance.
Development countries.	OSI: Open Society Institute.	HIN: Health InterNetwork.	Policy Reform.	Health policy reform.	The Network Public Health Programs support efforts to encourage the development of health policies and services based on public health principles, evidence, and best practice, rather than on entrenched interests and tradition. International Policy Fellowships. In collaboration with OSI's International Policy Fellowships program in Budapest, the Public Health Programs awarded six fellowships in public health in 2001, including support for the analysis of: opportunities and barriers to the use of health impact assessment in Hungary; access by sex workers to medical, social, and psychological services in the Baltics; reproductive health policy in Latvia; reform of medical informatics in occupational medicine in Russia; role of supranational organizations in the politics of health care reform in Central and Eastern Europe; design of pharmaceutical policy in

SUCCESS STORIES: CENTRAL AND EASTERN EUROPE					
Reference Countries	**Organization**	**Key Initiative**	**Specific Project**	**Goal**	**Abstract**
					Armenia.
Hungary. Lithuania. Russia.	OSI: Open Society Institute.	HIN: Health InterNetwork.	Public Health Education.	Equitable access to health information.	To promote access to health data and information, the Public Health Programs gave grants to support national public health information servers in seven countries. Through a joint program with the National Center for Health Statistics in the United States, support also went to national statistics offices in Hungary, Lithuania, and Russia to standardize data collection efforts.
Romani. Macedonia.	OSI: Open Society Institute.	HIN: Health InterNetwork.	Public Health Programs.	Health policy reform.	The Public Health Programs support efforts by training institutes and professional associations to raise the skills of providers in the region. Romani Health. Throughout Central and Eastern Europe, the health of the Roma is generally worse than the health of the population at large. The Romani community has a higher infant mortality rate and an average lower life expectancy than the majority community. Isolation, neglect, and discrimination contribute to the Romani community's lack of access to proper health care. The Public Health Programs supported Soros foundation efforts in Macedonia and Romania to assess Romani health status as the basis for health policy reform. A program was developed for 2002 to increase access to health services and keep Romani health on the agenda at national and regional levels.
Russia	World Bank		The US/Russia Child Health Care Telemedicine Network	Telemedicine	Managed by the Rostropovich foundation, the project creates an international tele-health care network that will provide Russian paediatric medical personnel in St. Petersburg, Russia, with the education and clinical training necessary for the effective management of children with cancer.

SUCCESS STORIES: ASIA					
Reference Countries	**Organization**	**Key Initiative**	**Specific Project**	**Goal**	**Abstract**
	EC/UNFA.	EC/UNFA INITIATIVE FOR REPRODUCTIVE HEALTH IN ASIA.		Reproductive health.	Projects of the EC/UNFPA Initiative for Reproductive Health (RHI)in Asia. Over 40 EC/UNFPA funded projects are being implemented in the frame of this Initiative. Countries' projects. 3 regional projects: Information and Communication Network (ComNet), Monitoring and Evaluation and Gender Equity and Reproductive Health and Rights.
Bangladesh.	EC/UNFA.	EC/UNFA initiative for reproductive health in asia.	Expanding access of low-income women and men to reproductive health.	Reproductive health.	This RHI project will be implemented by MSCS (Mary Stopes Clinic Society)with specific technical support from MSI (Marie Stopes International). The purpose of the project is to increase the utilisation of RH services including family planning with special emphasis on clinical contraceptives. MSCS, via this project, has expanded its FP and RH service provision through additional four clinics in smaller distrICT of Bangladesh. These services are open to all women and men of the district but special efforts are being made to target the low-income households. The clinics provide long- and short-term FP methods as well as information and services related to RH, STDs and RTIs. Two of the four clinics have male units to serve the male clients and remain open during evenings to provide reproductive health (RH, STDs and RTIs, services and psychosexual counselling)to men. The other two clinics have normal delivery units to provide safe delivery services to women, with referral links to more specialised clinics, hospitals and mother and child welfare centres. Under this project a laparoscope has been procured to provide laparoscopic sterilisation services in one of the existing MSCS clinics in Dhaka. Training on the

Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
					technology is being be provided to two doctors in the respective clinic.
Bangladesh.	Associates for Community and Population Research.	Dissemination of information and promotion of sustainable development initiatives.	Haidary Kamal , Executive Director; House 3/10, Lalmatia Block A, Dhaka, Bangladesh; 880-2-9114784, 91176; http://www.propoor.org/ngos/?id=92.	Family planning.	Established in 1998, ProPoor is committed to the dissemination of information and promotion of sustainable development initiatives, in response to the needs of under represented and marginalized sectors of society in the South Asia. ProPoor is underwritten by The ProPoor InfoTech Centre Trust, Rajkot, Gujarat (India)and is administered by CharityFocus. Mission: To work for the welfare of the weaker sections of the society. To organise campaigns with the aim of making people aware of the need for family planning.
Cambodia.	EC/UNFA.	EC/UNFA initiative for reproductive health in asia.	Reproductive health for vulnerable children and youths in cambodia.	Reproductive health.	Mith Samlanh/Friends and OEB (Operations Enfants de Battambang), together with PSF (Pharmaciens sans FrontiÞres), target 30,000 vulnerable youths (street children, young independent commercial sex workers, and out-of-school youths)aged 8-25 years. Activities are based in Battambang and Phnom Penh squatter ommunities and the provinces that the youth come from. The project plans to reinforce RH information, education and care amongst the target population, with a specific RH education programme aimed at children in the provinces. By providing training to lower the risk of abuse and risk behaviour within the population, it hopes to facilitate harmonious social integration and family reintegration of these vulnerable individuals.
Cambodia.	EC/UNFA.	EC/UNFA initiative for reproductive health in asia.	Media education to improve adolescent sexual and reproductive health in cambodia.	Reproductive health.	CHEMS (Cambodian Health Education Media Service), CHED (Cambodian Health Education Development), and RHAC (Reproductive Health Association of Cambodia)work in collaboration

Above the table (title row): **SUCCESS STORIES: ASIA**

SUCCESS STORIES: ASIA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
					with HU (Health Unlimited), the European partner, to produce informative and interactive sexual health-related media programmes for Cambodian youths aged 12-25 years. Project offices are located in Phnom Penh and Battambang. Both these cities and the surrounding areas can therefore be reached by broadcast media. The project aims at increasing the awareness of SRH amongst Cambodian youths, and to promote the use of the available health care services.
Central Asia.	ITU: International Telecommunication Union.	WHO's Health InterNetwork.		Health care information gap. Equitable access to health information.	Recognizing the negative effects associated with unequal distribution of health-related information throughout the world, the Secretary General of the United Nations called on the World Health Organization (WHO)to bridge the digital divide in health. Drawing on the expertise of public and private actors, international organizations and NGOs, WHO launched the Health InterNetwork to address the healthcare information gap that exists between developed and developing countries.
India.	JIVA Ayurveda.	JIVA.	Rural Health Camp.	Rural health care.	The Rural Health Camp program seeks to bring free medical help to the needy people in the Indian villages, where basic health services are only for the namesake. As part of the program, Auyrvedic medicines and treatment are given to the camp attendees. Also, the camp conductors educate the villagers on health, sanitation and hygiene. These camps integrate both the relief and educational aspects for achieving lasting results in the target villages.
India.	WHO.	HIN: Health InterNetwork.	India Programme on Essential Drugs.	Drugs. Drug policy.	INDIA-DRUG is a collaborative effort between the WHO-India Programme on Essential Drugs, the Delhi Society for the Rational Use of Drugs

SUCCESS STORIES: ASIA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
					(DSPRUD), and SATELLIFE. Spreading vital information around the world, INDIA-DRUG is a country-focused version of SATELLIFE's electronic discussion groups on essential drugs. INDIA-DRUG is used by health care professionals to obtain and discuss current information on essential drugs, policy, program activities, education and training. Members also use INDIA-DRUG to announce and learn of upcoming conferences or courses in their field.
India.	Amend.	ProPoor.		Schizophrenics. Mentally disturbed individuals.	Working with a small but fiercely dedicated staff, in less than five years, ProPoor has built a website that showcases the details of nearly 13,000 nonprofits across South Asia. ProPoor allows internet users to identify NGOs by name, region, or area of focus. It opens channels for benefactors to find projects to support and opens lines of communication among charitable organizations. Mission: To provide emotional support to schizophrenics and other mentally disturbed individuals by offering information about the availability of services such as counseling therapy, rehabilitation and treatment.
India.	Soros Foundation.	Jiva.	Teledoc.	Rural health care.	The project aims to develop the Teledoc software system in order to establish a sustainable system of providing regular treatment to people in rural areas using hand-held computers. Teledoc (formerly Handy Vaid), supported by Soros Foundation, is a Jiva initiative that seeks to get timely health advice and medication to the patient's doorstep by making innovative use of PDAs. A representative carrying a PDA through the village collects information and queries from the villagers using a pre-designed consultation form. This information is then

SUCCESS STORIES: ASIA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
					transferred to a doctor in the city, who diagnoses the problem and suggests appropriate treatment, precautions and medication. The doctor's diagnosis and suggested treatment is then once again transferred to the PDA and carried back to the villager.
India. City. Chittoor.	Arogyavaram Medical Centre.	ProPoor.		Tuberculosis. Chest diseases. Cardio vascular diseases. Community health services. Medical aid. Training doctors, nurses and paramedical workers. HIV/AIDS.	Working with a small but fiercely dedicated staff, in less than five years, ProPoor has built a website that showcases the details of nearly 13,000 nonprofits across South Asia. ProPoor allows internet users to identify NGOs by name, region, or area of focus. It opens channels for benefactors to find projects to support and opens lines of communication among charitable organizations. In addition ProPoor contains detailed developmental news, donor appeals, project reports, and discussions. ProPoor is underwritten by The ProPoor InfoTech Centre Trust, Rajkot, Gujarat (India)and is administered by CharityFocus. Mission: To provide general health care at normal cost, combat tuberculosis, treat chest diseases and cardio vascular diseases. To organise and develop effective community health services. To provide modern medical aid to meet the continuing needs of the community, training doctors, nurses and paramedical workers. To prevent HIV/ AIDS by awareness programmes and rehabilitation of disabled children.
India: Jaipur (Rajasthan).	Government of Rajasthan.		HIV/AIDS telephone hotline project.	HIV/AIDS.	Initiated in June, 2000, this HIV/AIDS telephone hotline project in Jaipur, Rajasthan, India functions 24 hours a day, 7 days a week, 365 days a year. The government-sponsored programme runs with the help of computer software, assisted by a voice interactive system. Options for helpline callers

SUCCESS STORIES: ASIA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
					include information on symptoms, diagnosis, and support for people living with HIV/AIDS, as well as an option for recording personal queries. Organisers contend that the use of ICT has make the project more effective in terms of reducing costs and increasing impact and outreach. ICT, they say, are more cost-effective than employing counselors around the clock. They feel that this model can be readily upgraded to serve many more clients, and could be replicated in other regions and cultures. They contend that this service should be accessible through the Internet and by long-distance callers within India, as well as through private telephone services.
India: Nalgonda district.	World Bank.	India Health Care initiative.	Digital assistants to meet rural healthcare needs.	Rural health care.	The Andhra Pradesh government and a local software solutions company have designed a package that will use mobile computing devices to help meet the healthcare needs of rural people. The Andhra Pradesh government and the software solutions provider CMC Ltd have designed a novel healthcare project to tackle issues relating to rural health in the state and eventually,the country. The project is part of the India Health Care initiative and is being funded by the World Bank.
India	EC	ICT in Asia	Support to health and family welfare sector development		A Sector Investment Programme for a sustainable policy reform process in the family Welfare Programme aimed at improving quality & accessibility of health services. ICT inputs: (a) project management and accounting s/w used to manage the programme; (b) a local information system expert; (c) extensive use of email for communication with the beneficiary. ICT output:: two applications for the Department of

SUCCESS STORIES: ASIA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
					Family Welfare (Referral Unit Management System; Information Reporting System).
Indonesia			Generalizable Model for Introducing Technologies to Expand and Strengthen National Reproductive Health Training and Service Delivery Systems		The purpose of the project is to refine and demonstrate solutions (ReproSystemTM components) for strengthening national, competency-based training (CBT) and service delivery systems by application of computer and communications technologies to address constraints to information flow in training networks. The ReproSystemTM's solutions used will be ModCalTM.
Laos.	EC/UNFA.	EC/UNFA INITIATIVE FOR REPRODUCTIVE HEALTH IN ASIA.	FEASIBILITY STUDY FOR REPRODUCTIVE HEALTH COMMUNICATION PROJECT.	Reproductive health.	FEASIBILITY STUDY FOR REPRODUCTIVE HEALTH COMMUNICATION PROJECT: In partnership with the Lao National Radio, Lao Youth Union and Lao Red Cross, HU (Health Unlimited)conducted a feasibility study in late 1999, to look at the possibility of developing a radio communication project. The feasibility study included a literature review of IEC and media documentation in Lao PDR, meetings with prospective partners, key informants and stakeholders in the reproductive health sector, and in-depth focus group discussions with adolescents in Savannakhet and Attapeu provinces.
Nepal.	UNDP Nepal country programme.			HIV/AIDS.	Satellite digital radio broadcasts are reaching rural communities in Nepal with locally-produced programmes imparting valuable information on HIV/AIDS and gender issues through a new initiative by UNDP and several partners. Other project partners include UNICEF, the UNDP Nepal country programme, CARE Nepal, the Early Childhood Development Division of the World Bank, the Ford Foundation and the US Agency for

SUCCESS STORIES: ASIA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
					International Development (USAID).
Nepal.	United Nations Foundation.		HIV/AIDS prevention and Women and Girl's.	HIV/AIDS prevention.	This pilot project, supported by the United Nations Foundation, will provide access to critical information and education to underserved urban and rural communities in the Asia Pacific region. The focus of the project is HIV/AIDS Prevention and Women's and Girls' Empowerment with a later expansion to other sustainable development topics important to the community. The pilot phase of the project entails establishing 800 sites in Nepal.
Nepal.	EC/UNFA.	EC/UNFA initiative for reproductive health in asia.	Expanding access to reproductive health services in under-served areas of nepal through static and mobile services.	Reproductive health.	SPN (Sunaulo Parivar Nepal), the Nepalese affiliate of MSI (Marie Stopes International)developed this project. MSI/SPN have been gaining experience in providing clinic and mobile RH services to under-served areas for more than five years.
Viet Nam.	EC/UNFA.	EC/UNFA initiative for reproductive health in asia.	Capacity Building in Adolescent Reproductive Health for Local Non-Governmental Organisations.	Reproductive health.	This RHI project was designed by a Consortium of Local Organisations in Hanoi and Ho Chi Minh City in collaboration with CARE Germany. An essential part of the project refers to strengthening linkages within the RHI: Not only are other RHI partners invited to participate in the workshops, but IEC materials and messages, that have been developed by RaHF, CARE and VINAPFA, are being checked by a joint committee and made available to other participating projects. Finally, CARE will work with all NGOs involved in the RHI to present a policy paper on ASRH to the national authorities, based on the experience of the RHI, at the end of the project.

SUCCESS STORIES: AFRICA					
Reference Countries	**Organization**	**Key Initiative**	**Specific Project**	**Goal**	**Abstract**
Africa Region.	University of Pretoria		AfriHealth	Public Health Education Capacity	The objective is mapping the capacity for technology-supported and technology-based distance learning in Public Health Education in and for Africa. Specific objectives: (a) conduct a region-wide assessment of capacity in this field, determining what is needed to make technology and learning work for public health training in Africa (b) assess the capacity for continuing education in public health.
Angola.	United Nations Population Fund.	HIN: Health InterNetwork.	Special Initiatives for Africa, SIDS, Arab States and Countries with Economies in Transition.		Africa and the Arab States: The Regional Commissions have directed substantial efforts in support of sustainable development. The Regional Commission for Africa (ECA)has made progress in the application of the PEDA model for integrated planning. The model demonstrates how demographic variables, the environment and modes of agricultural production interact in vital ways with great impact on food security in particular. The Commission on Sustainable Development (CSD-8)held a side event highlighting this multi-sector decision-making aid and the collaborative efforts of ECA and UNFPA. Angola: A national resettlement of settlers scheme provided reproductive health services and securities successfully, through collaborative assistance with UNCHS, resulting in improved social condition for communities directly.
Botswana.	United Nations Development Programme.	HIN: Health InterNetwork.	Right-to-Care not-for-profit HIV/AIDS managed care initiative.	HIV/AIDS.	The strategy is to use web-based technologies to reduce costs for diagnostics, treatment and monitoring as part of a national managed-care programme which includes anti-retroviral therapy. Currently, anti-retroviral drug treatments cost

SUCCESS STORIES: AFRICA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
					patients between R600 and R1 500 a month with lab tests of R466 a month. Through R2C, costs will drop to a total of R700 a month with administration fees of R30 a patient a month for the first 5 000 patients. Once there are 100,000 patients on the programme costsare expected to drop to R10 a month and by the time there are 250 000 patients, the monthly cost for patient care, including lab tests and monitoring by a doctor, are expected to come down to R8 a month. The objective of the International Association of Physicians in Aids Care (IAPAC), a US-based NGO, is to rapidly build infrastructure, develop capacity, and implement targeted programs that will produce measurable outcomes. It aims to marshal general practitioners into an accredited network it hopes will form the backbone of expanded Aids treatment in SA. Though the initiative will initially be limited to the private sector, the aim is to create a national Aids infrastructure that encompasses proven clinical guidelines, technical know-how, and logistical and IT support that can be transposed into a public health setting should government decide to make anti-retrovirals widely available.
Burkina Faso. Ghana. Mali. Tanzania. Uganda. Zambia.	IICD: International Institute for Communication and Development.			Assists developing countries to realise locally owned sustainable development by harnessing the potential of information and communication technologies (ICT).	The International Institute for Communication and Development (IICD) assists developing countries to realise locally owned sustainable development by harnessing the potential of information and communication technologies (ICT). IICD works with its partner organisations in selected countries, helping local stakeholders to assess the potential uses of ICT in development. We focus on 'traditional' development sectors, such as education,

SUCCESS STORIES: AFRICA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
					good governance, health, livelihood opportunities (especially agriculture) and environment. IICD is an independent non-profit foundation, established by the Netherlands Minister for Development Cooperation in 1997. Its sources of core funding are the Directorate-General for Development Cooperation (DGIS), the UK Department for International Development (DFID)and the Swiss Agency for Development Cooperation (SDC).
Development Countries.	Bill and Melinda Gates.	HIN: Health InterNetwork.	Global Health.	Reproductive health.	The Bill and Melinda Gates Foundation is committed to giving mothers and their children in the developing world an equitable chance at survival. Support is focused on programs using new or existing interventions which demonstrate innovative approaches to meeting this challenge.
Development Countries.	ITU International Telecommunication Union.	WHO's Health InterNetwork.		Health care information gap. Equitable access to health information.	Recognizing the negative effects associated with unequal distribution of health-related information throughout the world, the Secretary General of the United Nations called on the World Health Organization (WHO)to bridge the digital divide in health. Drawing on the expertise of public and private actors, international organizations and NGOs, WHO launched the Health InterNetwork to address the healthcare information gap that exists between developed and developing countries.
Ghana Kenya Uganda	Satellife.	HIN: Health InterNetwork.		Equitable access to health information.	In the first ohase, the objective of the Project was to demonstrate the feasibility and usefulness of using relatively inexpensive handheld computer technology in the conditions found in Africa to conduct a survey of caregivers during a measles vaccination campaign. The survey would be done at immunization sites during an immunization event planned for the Cape Coast region of Ghana in

SUCCESS STORIES: AFRICA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
					December 2001. It was hypothesized that this survey could be done quickly and accurately and encompass a large sample. Results would be in a timely manner that would facilitate planning for future measles and other public health efforts. A short user-satisfaction survey was also loaded onto the PDAs for the surveyors to fill out after they returned from the field. Questions included topics such as problems encountered, ease of use and comparison to a paper-based survey. In the second phase, the Project tests the viability of the handheld computer for gathering information that is critical to decision makers and policy makers, and for disseminating information among health professionals in Kenya and Uganda. SATELLIFE loaded 80 PDAs with the medical reference materials and a short survey on Malaria in March 2002.
Development countries.	Satellife.	HIN: Health InterNetwork.	AFRO-NETS: African Networks for Health Research Development.	Equitable access to health information.	The electronic conference for the 'African Networks for Health Research Development' (AFRO-NETS) was established in 1997 to facilitate exchange of information among different networks active in Health Research for Development in Anglophone Africa, and to facilitate collaboration in the fields of capacity building, planning, and research.
Development countries.	Health & Development Networks (HDN) AusAID UNAIDS		Insight Initiative		A global project that used electronic networking as a means of increasing the number of voices and perspectives in the preparation and follow-up to two major HIV/AIDS conferences spanning two continents. The project was able to facilitate and document the generation of local content as well as facilitate the exchange of relevant content between the southern African and Asia Pacific regions

PE 338.697

SUCCESS STORIES: AFRICA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
					The Initiative was innovative in its use of ICT in order to address a variety of objectives: (a) to increase awareness of the 1st Southern African Regional Community Home Based Care Conference (Botswana ,March 2001); and the Fifth International Conference on Home and Community Care for Persons Living with HIV/AIDS (Thailand, December 2001); (b) the need to integrate themes, lessons learnt and resolutions adopted at previous Home and Community Care Conferences. For this goal, two specific time-limited moderated structured discussions related to the conferences were held using the ProCAARE e-mail discussion forum.; (c) Following the events, post-conference structured discussions were facilitated; (d) To capture, share and contrast the southern African and Asia Pacific perspectives and experiences on community based care, highlighting the differences and similarities between HIV/AIDS care needs in the two regions.
Development countries.	United Nations Development Programme.	HIN: Health InterNetwork.	AUDIENCE AND MESSAGE STRATEGY for Africa Alive!	HIV/AIDS.	The AUDIENCE AND MESSAGE STRATEGY for Africa Alive! employs the Enter-Educate approach pioneered by JHU/CCP. It encourages young people not only to learn and talk about HIV/AIDS, but also to make the choice to adopt safer sexual behaviors (i.e., abstinence, condoms, and keeping to one partner). This approach combines entertainment and education to attract attention and provide a forum for delivering behavior change messages. With the input of entertainment and health professionals, and audience feedback, quality programs are developed that have audience appeal as well as powerful,

SUCCESS STORIES: AFRICA					
Reference Countries	**Organization**	**Key Initiative**	**Specific Project**	**Goal**	**Abstract**
					factually correct social messages.
Development countries.	United Nations Development Programme.	HIN: Health InterNetwork.	Africa HARD: The Africa HIV/AIDS Research Database.	HIV/AIDS.	AfricaHARD is a fledgling initiative that attempts to provide information and resources to various individuals and organizations that combat the African AIDS epidemic. It provides information in many areas both for the health community and for individuals looking for open space in which to share views and ideas, as well as gather information on the evolving situation in Africa on a continental, regional or country level. Discussion Forum Join an online discussion group where you can discuss with other concerned parties and individuals on HIV/Aids related issues. Chat Room Enter our virtual chat room and exchange views with other visitors.
East Africa.	UN: United Nations in Kenya in collaboration with all 24 UN agencies based in Nairobi.	Heart and Soul - A Soap Opera for Africa - East Africa.		HIV/AIDS.	Initiated in 2002 by the United Nations (UN)in Kenya in collaboration with all 24 UN agencies based in Nairobi, this multimedia communications strategy is centred on a prime-time television and radio soap opera called 'Heart Soul'. Scripted, directed, acted, and produced by Kenyan talents in the film and television industry, the series explores social and development issues evoked by five key themes: HIV/AIDS, environment and natural disaster management, governance and human rights, poverty reduction, and gender issues. These issues, as well as the ordinary joys and trials of everyday life in Africa, are highlighted through focus on the rich.
Ethiopia.	Population Media Center (PMC).			Family planning. HIV/AIDS. Reproductive health	New evidence indicates that more than a third (35 percent) of new family planning clients in Ethiopia have heard one of the radio soap operas. Nearly six percent of the new clients said they visited the clinic

SUCCESS STORIES: AFRICA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
					as a result of listening to one of the dramas. Since the programmes began broadcasting in June 2002, 7,500 letters from enthusiastic listeners have arrived at Population Media Center's (PMC)Ethiopia office, the U.S.-based organisation behind the dramas.
Ghana.	Health Foundation of Ghana. Gamos. BigWorld.		Stimulating Local Digital Health Content in Ghana.	Health knowledge distribution. Health education programmes.	In February 2003, the Health Foundation of Ghana hosted two awareness raising workshops to increase awareness of possibilities created by digital media and consultation among the relevant Government and NGO community in Ghana.
Ghana.	Health Foundation of Ghana.		Stimulating local digital health content in Ghana.	Assists developing countries to realise locally owned sustainable development by harnessing the potential of information and communication technologies (ICT).	The International Institute for Communication and Development (IICD) assists developing countries to realise locally owned sustainable development by harnessing the potential of information and communication technologies (ICT). IICD works with its partner organisations in selected countries, helping local stakeholders to assess the potential uses of ICT in development. We focus on 'traditional' development sectors, such as education, good governance, health, livelihood opportunities (especially agriculture) and environment. IICD is an independent non-profit foundation, established by the Netherlands Minister for Development Cooperation in 1997. Its sources of core funding are the Directorate-General for Development Cooperation (DGIS), the UK Department for International Development (DFID)and the Swiss Agency for Development Cooperation (SDC).
Ghana.	Project owner: Ministry of Health.		ICT Policy Strategy for the Health Sector.	Assists developing countries to realise locally owned sustainable development by harnessing the	A general ICT policy strategy and programme for the Health Sector in Ghana has not yet been developed. In the National Health policy papers development by the Government of Ghana and the Ministry of Health, ICT is addressed in a fractional

SUCCESS STORIES: AFRICA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
				potential of information and communication technologies (ICT).	way. Several specific proposals have been presented and the different stakeholders in the Health Sector have initiated a small number of ICT projects. Some of the initiatives have been successful in addressing some of the information and communication problems that the Health Sector is facing. Yet, it has resulted in a sub-optimal allocation of scarce human and financial resources and incompatible systems. To address this issue, the Ministry of Health has undertaken Sector ICT Roundtable workshop on Health Care Provision in Ghana in October 1999, in partnership with IICD and ISOG. The workshop resulted in a series of policy recommendations and identified priority areas in which ICT is expected to be most effective in supporting health care provision in Ghana. A first priority was given to the development of an ICT policy strategy plan. June, 2001 A draft ICT Policy and Strategy Plan for the Health Sector is produced and discussed at a workshop with high-level representatives of the Ministry of Health. The draft policy is further elaborated by a team of representatives of the relevant departments of the Ministry of Health and a representative of IICD and ISOG. The government approved the ICT policy document. In a second step of the process, teams of representatives of the different entities and levels in the sector started with the formulation of more specific ICT programs in four ICT priority areas, including Performance Measurement, Data Record systems, Budget, Planning and Management and Surveillance and Rapid Response systems. Detailed elaboration of the two programmes, deemed as

SUCCESS STORIES: AFRICA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
					priority, is in the process of being done and those are the Data Records System, and the Surveillance and Rapid Response System. Objectives:The project objective is to develop an ICT policy and programme for the health sector, based on active participation of key stakeholders in the health sector. Planned Outputs: The project outputs include the preparation of an ICT Policy Strategy and Program for the health sector and a series of workshops for awareness and validation policy strategy plan with stakeholders in the health sector. The Policy will address: 1)the role of ICT in enhancing the National Health objectives and strategies; 2) ICT policy guidelines supporting an efficient and effective introduction of ICT in the health sector; 3) an ICT infrastructure policy supporting the development of an efficient and effective basis ICT infrastructure in the health sector; and 4) an Information Systems Policy for the development of Information Systems in priority areas in the health care sector in Ghana. Development Impacts: The program's wider development objective is to support the delivery of health care services in Ghana through the mainstreaming of ICT in key health care activities. ICT can contribute to an improvement of the access, quality and efficiency of health care provision through a better communication, data and information management. At primary health care level, ICT can 1) strengthen the quality of care through better data and information anmanagement assisting in improvement of the working environment and quality assurance, and 2)enhance

SUCCESS STORIES: AFRICA					
Reference Countries	**Organization**	**Key Initiative**	**Specific Project**	**Goal**	**Abstract**
					the efficiency of care through better information management, planning and budget mechanisms and financial management. At central health care level ICT can 1)improve the capacity for policy analysis, performance monitoring and evaluation and 2)strengthen central support systems for health information management. Management: The Ministry of Health (MoH)is the program owner and co-ordinating agency. MoH is responsible for National health Policy development and co-ordinates all activities related to the health sector in Ghana. To ensure full commitment of the partners in the health sector, key stakeholders in the health sector will be involved in the development of the program. The Internet Society of Ghana and the International Institute for Communication and Development in the Netherlands will operate as facilitator of the activities. Market: The programme budget is expected to be US$ 10,000 and is fully financed by the Ministry of Health, Ghana. Funder: ISOG own contribution (1st year).
Kenya	InfoDev SatelLife			Health Information Training Center	InfoDev funds assist in establishing a pilot East African Regional Information Technology Training Centre (RITTC) in Nairobi, Kenya. The RITTC offers two courses for individuals recruited from health-related institutions and organizations in Eritrea, Ethiopia, Kenya, Tanzania and Uganda. The first course is a three-day introduction to information technology and its health applications. The second is a one week training course designed to create a cadre of Information Technology Trainers (ITTs), i.e. a group of health professionals skilled not only in the

SUCCESS STORIES: AFRICA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
					use of information technology, but also capable of training other health professionals in their home countries. The RITTC will be administered by SatelLife with assistance from the network management team of HealthNet Kenya (HNK) in planning and implementing the Project
Kenya	AfriAfya, African Network for Health Knowledge Management and Communication			Access to health Information HIV/AIDS	The aim is to explore new opportunities for harnessing communication and IT for community health, establishing mechanisms for generating, managing and sharing knowledge at community level through active institutional networking. The project has set up a small coordinating hub and seven field centres. Communication was established between the hub and each of the Partner Agencies and field sites, and between the different field sites. The project have been working accessing and receiving information from local and international sources, adapting it and ensuring it is relevant to practical issues in our setting, and then disseminating it to the community-based health intervention sites that we are working with. This is done through email, printed material, diskettes, CD ROMs, telephone and fax. Plans are underway to be able to share the content through WorldSpace data downloads via the WorldSpace wireless satellite communication with the information being uplinked through their Nairobi office.
Malawi.	United Nations Development Programme.	HIN: Health InterNetwork.	Aids Malawi.	HIV/AIDS.	The aim of the project is to make the naitonal Aids Strategy Public, to publish local disctrict plans eventually and to use online tools to share who is doing what, publish events, post resources, and mantain a directory of people to support networking, In addition basic country statistics and

SUCCESS STORIES: AFRICA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
					maps showing key figures are available. it also supports an email mailing list for discussion. Core informaiton about programs available was collected and added to the online database. The Technical working committee was informed of hte web site and told how to add content.
Mali.	UNDP: United Nations Development Program. Ministry of Communication and New Information Technologies.		National strategy to get all major sectors online.	Develop an ICT infrastructure.	The aim is to develop an ICT infrastructure and use the new technologies to modernize public administration, making it easier for as many citizens as possible to access services and participate in civic activities. The strategy will also encourage cooperation on ICT with other countries in the region. The Government is focusing on ICT applications relevant to sectors such as health, education, business, farm and pastoral communities, culture, public administration and decentralization.
Mali.	Reseau Informatique Malien pour l'Information et la Communication.		Keneya-blown.	Assists developing countries to realise locally owned sustainable development by harnessing the potential of information and communication technologies (ICT).	Keneya blown est un projet pilote de telemedecine qui avait pour mission de faire l'etude de faisabilite dela telemedecine au Mali, ce qui a justement revele l'interet de la telemedecine dans un pays pauvre comme le mali, surtout quand on sait que la majorite des specialistes dans les pays en voie de developpement sont concentres dans les villes, ce n'est que la telemedecine de par ses applications commme la teleradiologie, le tele-enseignement, la teleconsultation qui peut etre d'un aide.
Nigeria.	Society for Family Health (Nigerian affiliate of Population Services International).	Nigerian radio campaign generates safe behaviour.		Sexual education. Family planning.	The Society for Family Health, Nigerian affiliate of Population Services International, has harnessed the power of radio to broadcast sexually-transmitted infection prevention and safer sex messages. As part of a behavior change campaign targeting sexually active men and women aged 18-34, the radio program

SUCCESS STORIES: AFRICA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
South Africa.	VODACOM.			Tuberculosis.	Tuberculosis (TB) patients in South Africa now have a new weapon in the fight against the disease - a cellphone. A pilot project in the coastal city of Cape Town is using the text message service on cellphones to remind patients to take their medication, saving the over-stretched public health services time and money. The country is said to be facing one of the worst TB epidemics in the world, with disease rates up to 60 times higher than those currently experienced in the United States.
South Africa.	UNPF: United Nations Population Fund.	HIN: Health InterNetwork.	Special Initiatives for Africa, SIDS, Arab States and Countries with Economies in Transition.		A community-based environment and reproductive health project in two rural distrICT was initiated in 1998 by the Government, together with Planned Parenthood Association of South Africa, Working for Water Programme, and UNFPA. Originally aimed to restore original water flows to rivers and streams, it then became linked to the provision of clean water, reproductive health and other basic services including addressing HIV/AIDS and the provision of employment, especially for women.
sub-Saharan Africa.			AIDSWEB		The overall HIV prevalence rate among African youth shows the continuing need for HIV/AIDS educational prevention activities targeted specifically for the young people who are not yet affected. The use of information and communications technologies (ICT) complements other Information Education and Communications (IEC) campaigns designed to reach youth. The same technology resources -- e-mail, CD-ROMs, listserves and the World Wide Web -- that can link HIV/AIDS educators and activists around the world, also holds great promise for reaching youth, who typically embrace the use of the technology for

SUCCESS STORIES: AFRICA					
Reference Countries	**Organization**	**Key Initiative**	**Specific Project**	**Goal**	**Abstract**
					entertainment, learning and communication when given access to these resources.
sub-Saharan Africa.	Bill and Melinda Gates.	HIN: Health InterNetwork.	Global Health Programme.	HIV/AIDS prevention. HIV/AIDS vaccine. Tuberculosis. Reproductive health.	The foundation's Global Health Program is focused on reducing global health inequities by accelerating the development, deployment and sustainability of health interventions that will save lives and dramatically reduce the disease burden in developing countries. The Global Health Program directs its resources to: Promote research and development of health technologies that will accelerate prevention, elimination or eradication of diseases, as well as increase their affordability in low-resource settings. Support programs that demonstrate effectiveness and feasibility of wide scale implementation of innovative health interventions, allowing other organizations and governments to confidently invest in similar models. Encourage sustainable access by developing countries to existing and future health technologies interventions through catalytic financing mechanisms. Increase visibility of effective public health approaches and strengthen support for public health leadership in developing countries.
sub-Saharan African countries.	PMC: Population Media Center. UNPF: The United Nations Population Fund. UNAIDS.			HIV/AIDS Education Using Entertainment.	The aim of the project is to develop effective and compelling communications on HIV/AIDS by strengthening partnerships among local FM radio networks and health and education, youth and women community-based organizations. The project is funded through UNAIDS and UNFPA. Co-implementing agencies are UNFPA and Population Media Center. PMC provides the technical assistance for the curriculum, inventory,

PE 338.697

SUCCESS STORIES: AFRICA					
Reference Countries	Organization	Key Initiative	Specific Project	Goal	Abstract
					needs assessment and training of radio stations for the project. UNFPA Culture, Gender and Human Rights Branch developed the project concept and proposal; it also coordinates inputs from UNFPA Country Offices in identification of countries, radio stations, health agencies and personnel.
Senegal	Ministry of health		Informatisation du Système d'Information `a des fins de Gestion (SIG) du Ministère de la Santé Publique et de l'Action Sociale (MSPAS) de la République de Sénégal	Health Management Information System	The project provides support to the Ministry of Health (MOH) in the development of a computerised network supporting the Senegal Health Management Information System (MIS). The firm, H3 Technologies, is responsible for supplying assistance to the Ministère de la Santé Publique et de l'Action Sociale (MSPAS) in the procurement of software programming, materials, the core logistics, word processing equipment, procedural manuals and the training of the MSPAS staff in utilisation of the above materials.
Swaziland.	PMC: Population Media Center. UNDP: United Nations Development Program-Swaziland.		Stop HIV/AIDS Spread.	HIV/AIDS.	In a country where infection rates are soaring, three popular television programs may prevent the spread of HIV/AIDS. The United Nations Development Program-Swaziland has asked Population Media Center (PMC)to work with three television shows, Swazi View, Coca Cola What's Up?, and the evening news, to build their capacity for entertainment-education with regard to reproductive health issues.