7. ICT FOR POVERTY REDUCTION

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KEY FINDINGS

Lessons Learned

- The poor have to be at the centre of poverty reduction efforts:
  - Technologies used must be adequate to the skills of the poor in order to exploit their potential effectively.
  - Content should receive as much attention as connectivity – it must be people-centred, demand-driven and in local languages.

- Attempts to use information communication technologies (ICTs) for poverty reduction are more effective when embedded and synchronised with other policies and resources:
  - A conducive environment, which includes freedom of expression, competitive markets, independent regulators, a universal service fund and other elements, is key.
  - National poverty reduction strategies or sector specific strategies for e.g. health or good governance allow for a targeted use of ICTs embedded in these other efforts.
  - In order to make use of information provided by ICTs, other resources must be available, e.g. job opportunities or access to credit or health services.

- Ownership by the local communities, partnership and networking are key to effective poverty reduction programmes: donors should not look for implementers of their visions but for partners with their own vision and encourage and support them in implementing it. Partners are required at the local and national level as are specialised institutions in all areas which matter in a specific context.

Trends and Innovations

- Integrated use and combination of different technologies: Internet and Community Radio or TV and local newspapers.

- Collaboration with/among providers of relevant information (local health clinics, research institutes, self-help organisations) to establish effective linkages.

Priorities / Potential for Action

- Give poor people a voice in decision making processes on all levels which affect their lives:
  - Local – information needs: priority areas for content are health, agriculture, weather, access to services. Women as key figures in information management deserve special attention.

  - National – conducive environment: freedom of expression, regulations for community radios, pro-poor service licences and integration of information needs in poverty reduction strategies.
  - Global – access to infrastructure and information: allocation of radio frequencies, Internet governance, intellectual property rights.

- Integrate ICT concerns in poverty reduction and sectoral strategies and integrate poverty concerns in ICT-related regulation and policies.

Burning Questions

- Poverty often has social and political roots – how can ICTs as technological tools be used to overcome social and political barriers?

- Poverty reduction is part of a broader development process and takes time – how can ICTs, as attractive tools, achieve measurable results/impact in a reasonable time frame?

- Poverty can be reduced by ICTs, there is enough anecdotal evidence – how can successful initiatives be scaled up and/or be implemented successfully in other regions?

ICT FOR POVERTY REDUCTION: MYTHS, REALITIES AND DEVELOPMENT IMPLICATIONS

Information is not a magic cure for hunger or poverty. However, the right information at the right time can help in finding a solution. ICT includes a whole range of technologies that facilitate communication and the processing and transmission of information by electronic means – from conventional radio and landline to computers, Internet and mobile phones. Most reports on telecentres in Asia, Africa and Latin America acknowledge that people use the phone and the photocopier, but rarely the computer and Internet facilities. They also acknowledge that those who use the computer and internet facilities are generally the most educated and the well off and not those most in need. Does ICT really contribute to the global effort to reduce poverty? This panel will discuss the myths, realities and development implications of ICT use for poverty reduction.

EVENT	Panel discussion 6.2
DATE/TIME	Thursday, 11 December, 14.00–15.30, Conference rooms 2 and 3
ORGANISER	Global Knowledge Partnership (GKP), Swiss Agency for Development and Cooperation (SDC)
PANEL SPEAKERS	**Richard Fuchs,** Director ICT-4D, Internationonal Development Research Centre (IDRC) **M. S. Swaminathan,** Director, M. S. Swaminathan Research Foundation (MSSRF) **Richard Gerster,** Director, Gerster Consulting **Clotilde Fonseca,** Executive Director, Omar Dengo Foundation
MODERATOR	**Martin Khor,** Director, Third World Network
RAPPORTEUR	**Stuart Mathison,** Program Manager, Foundation for Development Cooperation
KEY QUESTIONS	▸ What needs and rights do poor people have that could best be met by ICT (i.e., how is ICT contributing to the MDGs)? ▸ Has ICT helped to reduce poverty or just strengthened the power structure within societies in rural and under-developed areas? ▸ Has ICT increased relative poverty and placed valuable resources in the hands of a few, further perpetuating models of social, economic and political disempowerment and discrimination as it exists in the world today? ▸ Many micro-credit programmes and the World Bank have recognised that empowering women economically empowers the whole family economically. How can ICT play a more effective role?

by Stuart Mathison

Richard Fuchs started off the session by reporting on a forum which was organised in September 2003 by Canada's International Development Research Centre (IDRC) at Harvard University. Some thirty people from around the world were invited to discuss "Information and Communication Technologies and Poverty Reduction".[1] The participants included development specialists, academics, and Nobel Prize winning economists. The topics and key questions discussed included:

- the urgency of ICT access for poverty reduction: seismic changes are taking place, the availability and use of technology is no longer optional, and the cost reduction driving forces are working in favour of implementers;
- the importance of ICT governance and regulatory reform: proper regulation is critical and privatisation on its own has not been successful;
- social entrepreneurs; services and content for the poor: at the moment mobile phones are the quickest way to get out of poverty and content must make a difference to the daily life of the poor;
- the need for ICT alliances for gender equality, education, health, democracy: ICT can become a tool of reinforcing inequalities that already exist and alliances with other political agitators could make ICT more successful;
- donors: they face two big challenges, e.g. inertia within the organisation and scepticism of technologies.

M. S. Swaminathan: "There is much needless poverty in the world today. It is significant that the first of the Millennium Development Goals (MDG)[2] is about alleviation of poverty. We at the M. S. Swaminathan Research Foundation use information and communication technologies (ICT) for poverty reduction. Our work is guided by Mahatma Gandhi's principles of Anthyodaya ('unto the last') and trusteeship.

Four decades ago when India faced a major challenge on the food front we used biological technologies intelligently to transform a food-deficient country into a food-surplus country in a few years. Indeed, in the early 1960s experts had written off India as a hopeless case. But unmindful of what the experts said, Indian farm scientists worked hard to make the transformation possible. Of course, the

[1] A summary video, interviews with participants, and an extensive background survey of ICTs for Poverty Reduction can be found on http://web.idrc.ca/en/ev-46261-201-1-DO_TOPIC.html.

[2] MDG one stipulates: "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. For more information on the Millennium Development Goals visit http://www.un.org/millenniumgoals."

transformation was not brought about just by science and scientists alone; the farmers rose to the occasion and without their courage and fortitude and willingness to try out newer varieties and farm practices any amount of research could not have saved India from severe food shortage. Another equally important factor was the enlightened political leadership and the support of the bureaucrats; both Prime Minister Lal Bahadur Shastri and Food and Agriculture Minister C. Subramaniam took the right decisions and extended their full support to the research and extension programmes. Looking back, it is clear that without all of these falling in place, without robust partnerships of all key stakeholders, we could not have avoided certain disaster on the food front.

Today, food security in the developing world, especially in South Asia, is dependent less on resource-intensive agriculture and more on knowledge intensity. Millions of farm families and the rural poor need the right information and knowledge for their very survival. ICT can play a role in bringing about happiness to these people. Many developing countries remain poor largely because they had let the Industrial Revolution pass them by. They can ill afford to miss the information technology revolution.

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Digital happiness requires:

- Technology and techno-infrastructure – not just computers and the Internet, but also landline telephones, cellular phones, radio, television, etc. What is needed is a judicious blend of traditional and modern technologies depending on what would work best in a given situation ('horses for courses').
- Content – value-added information that the people can use in the immediate context and that can make a difference to their day-to-day lives.
- The content must be in the local language so the people will find it easy to use.
- Gender sensitivity – Men and women may not need the same kind of information. It is important to operate on the principle of social inclusion including the poorest and the most underprivileged.
- Partnerships – information has to be sourced from different quarters. Expertise is available in different institutions. It is therefore important to partner with a large number of experts and institutions to be able to satisfy the information needs of a community.

The poor are often illiterate and have no assets like land, livestock, fishpond or productive skills. Often they survive on uncertain wage labour. Therefore, building assets has to be the major goal of any poverty alleviation effort. Facili-

tating a paradigm shift from unskilled to skilled work is basic to both poverty reduction and a healthy and productive life.

"Pro-poor effects are more likely if ICTs are embedded in larger, demand-driven efforts. Ownership in defining the problem as well as the solutions is essential to avoid ineffective supply-oriented interventions. Effective efforts combine a number of elements to deal with an issue holistically."

Richard Gerster

How can we use information and communication technologies (ICT) in poverty alleviation programmes? History has shown that technologies, left to their own devices, will only exacerbate existing differences. Information and communication technologies are no exception. As Jesse Jackson once pointed out, with time the digital divide in the United States is only increasing and it is acquiring the dimensions of a racial ravine, with the relative disadvantage suffered by Blacks and Hispanics in inner cities increasing all the time. It is essential, therefore, for us to use ICT in a way that would bridge rather than enhance the digital divide.

ICT should be used as a vehicle for imparting market-driven skills through the pedagogic methodology of learning by doing. We have seen in our work in Pondicherry and elsewhere in southern India that the poor are able to take to new technologies like fish to water, if they are enabled to do so through practical training.[3]

ICT skills cannot be imparted in a vacuum. Knowledge and skill transfer needs to be synchronised with access to inputs necessary to apply the knowledge. For example, there may be a need for easy and timely access to credit. Content should receive as much importance as connectivity. It must be user- and demand-driven. The priority areas are:

- Weather – short, medium and long-range weather forecasts should be converted into location and farming system specific action plans.
- Water – it is not only the most basic need but also the centre of sustainable agriculture and essential for a productive and healthy life. It is intimately linked to health, agriculture, energy, biodiversity and ecosystem maintenance. The threat of water famines looms large and it is possible that future wars will be fought for water resources.
- Energy – it is central to the lives of the poor and affects them in terms of food, water, health, income and jobs. Access to energy is important for poverty alleviation. Access to affordable and renewable energy services is critical for increasing agricultural productivity, encouraging economic ac-

[3] For information on the Information Village Research Project in Pondicherry and elsewhere in India visit http://www.mssrf.org.

tivity, generating employment and income opportunities, and improving the quality of life.

- Health – good health is basic to a productive and happy life. We should aim to create zones where preventable diseases are totally eradicated.
- Agriculture (production, processing, marketing) – agriculture is central to sustainable development. Most of the poor live in rural areas and are dependent on agriculture (including crop and animal husbandry, fisheries, forestry, and agro-processing).
- Biodiversity and Ecosystem Management – the ecosystem generates a wide range of goods and services on which the world economy depends. About 40 per cent of the world economy is based on biological products and processes. Biodiversity is the feedstock of the biotechnology industry.

Generic information should be converted to location-specific information by local-level knowledge managers. A cadre of rural knowledge managers should be created consisting mostly of women, since this will help bridge the gender divide in terms of self esteem and social status. Forward linkages with reliable information sources and backward linkages with markets, hospitals, etc. have to be built into the ICT programmes. Providing opportunities to landless labour families for value-added non-farm livelihood options should be given priority. The programme should aim to attract and retain youth in rural professions.

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The programme should aim at creating a farmer participatory knowledge system with four kinds of symbiotic linkages:

- Lab-to-Lab – this will involve organising a consortium of scientific institutions and data providers.
- Lab-to-Land – this will involve symbiotic linkages between the providers of information and the users, so that the information disseminated is relevant to the life and work of rural families.
- Land-to-Lab – there is considerable traditional knowledge and wisdom concerning the sustainable management of natural resources, particularly water. Therefore, the technical experts should not only learn from traditional knowledge and experience, but also take steps to conserve for posterity the dying wisdom and the dying crops.
- Land-to-Land – there is much scope for lateral learning among rural families; such learning has high credibility because the knowledge is coming from a fellow farm woman or man who would have subjected the information to an impact analysis from the point of view of its economic and social relevance to the population.

Success Stories

ICT can provide tools for the conservation of local knowledge, which meets increased interest for exploitation. We have developed a Farmers' Rights Information Service that provides, among other information, a taxonomy of plants and details on usage, along with photographs and diagrams.

Let me give some more examples of benefits accruing to the local communities through our knowledge centres. The Kisan (Farmer) Credit Card Scheme enables farmers to obtain easy and timely credit. Village women and men are provided training in several micro-enterprises, such as mushroom cultivation, ornamental fish rearing, setting up of community-managed gene banks, seed banks and grain banks, production of handmade paper from banana waste, production of biopesticides and so on.

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Women in these villages form self-help groups and borrow money from banks to lend among themselves for setting up and running micro-enterprises. The return rate is often more than 100 per cent, meaning they return the loan ahead of time. So far there has not been a single instance of default. People may be poor, but they are honest. In contrast, in the corporate sector there have been many cases of defaulting and bad debts.

Fishermen in coastal villages near Pondicherry are provided with wave height forecasts from information downloaded from a U.S. Navy website. The wave height information is put on the notice board of the local knowledge centres as well as broadcast over a public address system so everyone in the village could hear. Ever since this service was started, there has not been a single death in the sea.

In a remote village in central Tamil Nadu, volunteers of our knowledge centre have perfected a novel method of bringing in literacy to a remote village community. They use a touch screen PC, digital camera and a CD-writer to prepare lessons for each individual. People in the family and objects in the home are photographed and burnt on a CD-ROM. One-word descriptions are then written, letter by letter, using flash software and each letter and the word is articulated by the volunteer. When the illiterate person inserts his own CD, the pictures appear on the screen and as he/she touches the picture on the screen, the words start forming slow enough for the person to follow and the sound byte starts playing too. The net result is multimedia education of the person. More than 150 people have been made functionally literate in this vil-

lage. Now they are able to read signboards, price lists displayed in shops, and transact business in shops, post offices, etc.

We are now experimenting with Internet Radio and are testing exchange of information with rural communities in Africa through the Open Knowledge Network (OKN) project in collaboration with One World International.[4]

To sum up, information and communication technologies can be used for poverty reduction, but we need to be cautious. It is much more than mere use of technology. It is more a question of working with people, giving them a sense of ownership, building partnerships with a number of experts and institutions, and creating a large and inclusive network. In the end, technology is just an enabler. As the Bolivian writer Alfonso Gumucio is fond of saying, 'a knife is a knife, it can be used on your dining table or to hurt someone'."

Richard Gerster: "The following messages are mainly based on a Learning Study on Information and Communication Technologies (ICT) and Poverty Reduction in Sub-Saharan Africa.[5] The study was done on behalf of The Building Communication Opportunities programme (BCO, formerly BDO), funded jointly by the Department for International Development (DFID, UK), the Directorate General for International Cooperation (DGIS, Netherlands), the Swiss Agency for Development and Cooperation (SDC, Switzerland), and the Canadian International Development Agency (CIDA, Canada). The purpose of the programme is 'to identify and help remove some of the key barriers and develop genuine opportunities for poverty-focused ICT for Development'. The programme builds on the existing activities of the five organisations involved: World Association of Community Radio Broadcasters (AMARC), Commonwealth Telecoms Organisation (CTO), International Institute for Communications and Development (IICD), OneWorld International and Panos. It focuses on four main areas: policy and regulatory issues, capacity building and effective applications, local content and awareness raising.

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[4] For more information on the Open Knowledge Network see pp. 185–189 or visit http://www.openknowledge.net.

[5] Gerster, R., Zimmermann, S. (2003), "ICTs and Poverty Reduction in Sub-Saharan Africa. A Learning Study (Synthesis)", Building Digital Opportunities (BDO) Programme, The Hague, Netherlands

Lessons Drawn

The lessons heavily draw on a multidimensional understanding of poverty which is more than material deprivation. It encompasses intangible aspects, such as lack of access to schooling or health care, vulnerability towards external events or being excluded from decision making processes. Also the information and communication technologies (ICT) are understood in a broad way that includes radio, television, fix-net and mobile telephony, fax, computer and Internet.

- ICT's contributions to pro-poor livelihoods, health and governance are feasible. In the scope of the Learning Study we came across several ICT-programmes which impacted on the lives of poor people in a poverty reducing way. This positive message also matters for achieving the Millennium Development Goals (MDGs). E.g. in Uganda, information received through community radios on improved agricultural technology, new farming methods, improved seeds and grass preservation contributed to higher agricultural production, leading again to increased food consumption (maize) as well as to income gains from the sale of milk and beans.

- An adequate ICT choice largely co-determines potential pro-poor effects. There is no such thing as technology neutrality. Distributional effects of different technology options have carefully to be considered. For example, in the context of Sub-Saharan Africa the use of community radio provides local solutions to local problems without referring a priori to external solutions. An intervention based on the Internet, however, enhances external 'solutions', if it is accessible at all by the poor. The combination of the Internet with other ICTs, radio in particular, has a significant potential for poverty reduction purposes.

- Pro-poor effects are more likely if ICTs are embedded in larger, demand-driven efforts. Ownership in defining the problem as well as the solutions is essential to avoid ineffective supply-oriented interventions. Effective efforts combine a number of elements to deal with an issue holistically. An example: ICT-supported information as such on AIDS-prevention or cure may not have the desirable effects if there are neither preservatives nor drugs available or people simply cannot afford them.

- Ownership by the local communities, partnership and networking are key to effective poverty reduction programmes. Donor agencies should not look for implementers of their visions but for partners having their own vision and encourage and support them in implementing it. No single agency can tackle poverty reduction by itself. Partners are required at the local and national

level, specialised institutions in all areas which matter in a specific context, be it health, education, agriculture or research, dissemination, monitoring or evaluation.

- ICTs are an effective means to increase the voices of the poor in (global) policy debates. At the national level ICTs facilitate networking and lobbying the Poverty Reduction Strategy Papers (PRSP). At the global level there are numerous networks in which it is essential to have a direct representation of the South. An example: during the preparation period of the World Summit on the Information Society (WSIS), the global discussion forum on the 'Information Society: Voices from the South' enjoyed a Southern participation of 70 per cent.

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Clotilde Fonseca

Conducive Environment

The national regulatory environments for ICTs are based on national visions of challenges, approaches and priorities. The significance of a conducive regulatory and policy environment can hardly be overrated. Key conditions which have to be combined with targeted pro-poor policies are

- Competitive ICT services markets – deregulation and liberalisation are inspired by economic thinking. They lower prices and increase quality. A competitive environment instead of a government monopoly is a necessary but not sufficient condition to achieve poverty reduction outcomes.

- Application of open source software – Open Source Software (OSS) is cost efficient, does not restrict adaptation to local needs like translations into local languages, reduces dependence from foreign firms, does not create barriers for local ICT experts but strengthens their training and keeps the jobs in-country.

- Establishment of an independent regulator – a clear and enforced legal framework, which should include an independent regulator, ensuring transparency and accountability, is again a necessary but not sufficient condition in view of pro poor outcomes.

- Freedom of expression – a clear and enforced legal framework should include respect for freedom of expression, diversity and the free flow of information.

Again, this is a necessary but not sufficient condition; in view of pro-poor outcomes it has to be combined with targeted pro-poor policies.

Mainstreaming Poverty Reduction

Markets are not enough. Governments need to declare poverty reduction a top priority and to mainstream it explicitly in ICT-related regulation and policies.

- All ICT-related regulation and policies, including community radio legislation – as far as radio is concerned, (i) the legal framework should provide a three-tier system for broadcasting: public radio, commercial radio, community radio; (ii) government support and policies pursued should clearly recognise and promote the special role of non-profit community broadcasting for, by and about the community, including them in their own communication strategy and allocating funds accordingly; (iii) open and participatory decision making processes need to be assured in order to allow for a fair allocation of the frequency spectrum to all broadcasters; (iv) as a source of revenue, community radio must be granted permission of commercial advertising to an appropriate extent; (v) the not-for-profit character of community radios should be honoured in taxation law.

- Pro-poor licence obligations for service providers and operators – licences should include specified obligations on how to contribute to the implementation of the universal service objectives; reduced rates for all community ICTs, including community radio; an e-rate for public schools as well as libraries, hospitals, and other public institutions.

- Universal service fund ensuring an effective service provision – in order to compensate for market failure, a national Universal Service Fund should be established to ensure an effective service provision, including local languages and local content for all; the fund must be transparently administrated by an independent regulator/body, financed by a levy on the operators and possibly by overseas development assistance (ODA). Independence and transparency are essential prerequisites for creating trust and goodwill also on the part of those who are taxed.

- Integration of ICT tools in Poverty Reduction Strategy Papers (PRSP) – in view of effective poverty reduction, the use of information and communication technology should become an integrated part of design and implementation of the PRSP.

Underestimated Challenges

Challenges often are underestimated. Just let us imagine who the poor are – they combine a number of barriers to reach and cooperate with them. The potential beneficiaries of ICT are unskilled, illiterate people, living in remote areas, mainly women, who may also speak a minority group language.

- ICTs are technological tools but poverty often has social and political roots. That poverty reduction is possible simply by the use of a new technology is the exception but not the rule. Often social and political change is needed as well.

- Most ICTs have an urban bias due to the connectedness requirement. A weak road network, non-availability of electrical power or a lack of fixed telephone lines discriminate against rural areas in reaping the full potential of ICT.

- Supply-led strategies carry the danger of neglecting needs and options of the poor. Many national as well as international ICT programmes are supply-led. Such a starting point carries an increased danger of non-sustainability and failure. The difficulties of many telecentres in Sub-Saharan Africa have to be seen in that light.

- ICTs are attractive tools but no development shortcuts. Poverty reduction takes time. Poverty reduction in the sense of empowerment is a learning exercise, which does not take place overnight. Moreover, it requires social transformation and learning processes not only of the powerless but also by the powerful. Sharing power and influence with the poor can be painful and includes a new vision of society."

Clotilde Fonseca: "In recent years, many experts and politicians have tended to view ICTs as the latest deus ex machina or magic solution for poverty reduction. This is, no doubt, one of the greater paradoxes of our time. Precisely when poverty had begun to be better and more scientifically understood as a complex and multifaceted problem, we seem to be allured by a new and unidimensional technological solution.

Even tough we are convinced that the potential of new technologies is real and that it can be successfully used to reduce poverty and foster development, in most cases, this power still needs to be unleashed. The very idea of the potential, however, has created new myths and misconceptions. The problem seems to arise from the belief that the poor will overcome poverty through access to information and that they will be able to rise from ignorance through access to the Internet, that is, the global or universal library. Within this view, then,

all that is needed to work the magic is to deploy the necessary technological infrastructure and to develop pertinent content, particularly local content that is made accessible in the local language. From there on, as it seems, developmental transformations will follow. Most unfortunately for the poor and for the development community, reason and reality have systematically proven otherwise.

"The process of integrating new technologies into development processes through education, empowerment, capacity building and productivity is not necessarily 'faster and cheaper'. It requires significant investments that must be sustained over time. This is one of the great challenges for governments, communities and international agencies."

Clotilde Fonseca

The following are some considerations and lessons learned from the implementation and evaluation of different programmes and projects using digital technologies conducted in the developing world. They are elements that need to be considered, if we really want to tap on to the potential of these technologies in more innovative and effective ways.

- Digital technologies are not just about information and communication – digital technologies are at the core of the present technological revolution. They are at the core of productive systems in contemporary society. They are much more than information and communication technologies. They are widespread productive and creative resources. They have changed the main production processes and the ways in which all types of services are delivered.

- Digital technologies are 'infrastructural technologies'[8] – the impact of these technologies has been so strong and widespread that they are today considered 'infrastructural technologies' just like electricity and transportation are. This reality needs to be well understood and taken into consideration when designing programmes for poverty reduction. They are no longer something nice to have but something fundamental to integration and inclusion.

- Empowering people – combating poverty through the use of digital technologies is not simply about hooking the poor to computer networks. The user of the technology or the beneficiary of the service has to be at the core of the design and implementation process. Projects of this nature have to be people-centred. Poverty reduction is about developing people, their minds, experiences and potential. It is about capacity building, about learning the skills and attaining the technology competency and fluency that will enable the poor to become better educated and more productive.

[8] Carr, N. G. (2004), Does IT Matter? Information Technology and the Corrosion of Competitive Advantage, Harvard Business School Press

- Breaking the inter-generational transmission of poverty – in order to break the vicious cycle of the intergenerational transmission of poverty, it is fundamental to introduce these technologies in ways that citizens – particularly the young – can use them to overcome the limitations they have inherited in view of the socio-economic limitations of their families and communities. This implies that the new generations have to be provided with access to them in situations and environments that are conducive to productivity, personal meaning and freedom.

- Building capacities and developing skills – most current ICT projects are techno-centric both in conceptual design and investment. People-centred projects need to consider the personal, social and economic needs of their beneficiaries while also taking into account the cognitive skills and learning demands necessary to be able to appropriate and use these technologies effectively. Digital inclusion will not take place unless the right experiences, knowledge and skills become a part of the human resource training and capacity building strategy. Techno-centric computer literacy approaches can be extremely risky and misleading if higher thinking, expressive and creative skills are not stimulated while working on the mastery of the technology.

- Need for sustained investment – the process of integrating new technologies into development processes through education, empowerment, capacity building and productivity is not necessarily 'faster and cheaper'. It requires significant investments that must be sustained over time. This is one of the great challenges for governments, communities and international agencies. Cost-effectiveness in this respect should not be understood as lower cost. Saving on key human development components can be quite costly in terms of time and money. There is cost and effort involved in democratising access and in articulating programmes that can generate effective appropriation and socio-economic mobility.

- Focus on the young – it is impossible to provide fruitful access to these technologies to everyone at the same time. Resources in developing countries are scarce and in high demand. Precisely for this reason, these nations should orient their initiatives to empowering the young. Countries that have opted for this policy have seen important changes in their productive structures in relatively short periods of time, particularly when these have been combined with good educational policies as well.

- Promotion of universal policies – countries and communities should aim at extending digital technology programmes for the young through general inclusion policies. Priorities can and should be established in this

process, but the design should foresee, from the onset, the planning for future, more encompassing phases. Projects that start as pilots – generally as small community telecentres – are valuable initiatives, but their frequently too focalised nature limits the development impact at a national level. Special attention should be given from the beginning to the rural and urban poor communities. Within them new technologies become extraordinary incentives and frequently yield significant non-technological developments and improvements.

- Provide ongoing development and support – the effective use of new technologies for development and poverty reduction depends to a significant degree on the ongoing support and follow-up given to all human development and training efforts. No one-shot training will ever be effective. The process of assimilation and appropriation on the part of underserved communities is often irregular and frequently needs constant support and follow-up before full command and use may be reached.

- Be sensitive to diversity – there is no such thing as a one-size-fits-all solution or design for this type of project. Sensitivity to context and cultural diversity are key to success.

- Plan and design for meaningful appropriation – planning projects and implementation processes must be based on thoughtful definition of target groups, purpose and objective. Techno-centric projects will not become fully enabling and transforming projects just because the technology is available. Powerful uses of technology for poverty reduction and empowerment require building a vision, developing human resources, integrating the community, establishing innovating learning environments, and building good follow-up and evaluation procedures. If meaningful appropriation is to be expected, the right strategies must be planned for, implemented and monitored. The miracle of appropriation will not just take place by spontaneous generation simply because it has been stated or expected.

- Take risks, take time, be flexible – there is no magic wand to guarantee results in the short term, particularly if initiatives are designed with a people-centred empowering approach. Different options imply different potentials and risks. Projects of this nature have to be defined and implemented in flexible ways. It is always important to be open to the changes that must be made and to have financial and organisational flexibility to introduce them. Changes and transformations that are meaningful require time to unfold and be perceived."

Debate with the Audience

If regulation is required first, then how can people in countries that lack enabling regulatory environments participate?
The lack of an enabling regulatory environment should not be a barrier to initiative. You don't need governance before you start, but it helps! There are other elements of an overall enabling environment, such as freedom of expression, which will make ICT more efficient and increase the leverage on the long run. The comments regarding regulation are also addressed to donors. They should integrate it in their discussions and can address the issue in multilateral bodies.

What can the private sector do to help facilitate the use of ICT by the poor?
Service providers in the North found that these technologies and applications are saleable. But, these services were subsidised by governments for years before they became sustainable and developed to the point where the private sector takes over. Elements that are needed are market linkages, investment, technical expertise and business acumen.

Are there any examples where there are measurable results of ICT resulting in poverty reduction?
A really well-known project is the Grameen Village Phone project in Bangladesh.[9] Now there are more than 30,000 telephone ladies providing the service. Their minimum income is US$ 50 a month net profit and it goes all the way to US$ 500 per month. However, it also has to be said that there is mainly anecdotal evidence. It is difficult to identify impact, because often ICT is just part of a broader process of development and poverty reduction. Furthermore in many of the projects there have been no baseline data so it is hard to show „hard facts", i.e. measured changes.

Governments have priority sectors for poverty reduction. Funds cannot be diverted from these sectors to ICT. How can ICT assist poverty reduction in these poorest countries?
Governments must address this basic need. However, by ignoring ICT the danger is that the digital divide will be widened and this will make the wealth gap even wider. But it is not a matter of either one or the other. Ideally ICT are integrated in an overall poverty reduction effort and are used where they are more efficient than other instruments.

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[9] For more information on the Grameen Village Phone project visit http://www.grameenphone.com/village.htm.

What is the trade-off between scalability and context?
There is a trade-off, the important factor is to be aware of it. A key element is to get people with context to do the scaling up. Also if you are serious about participatory development you have to live with these trade-offs.

How can ICT be used without electricity?
Electricity is a core element of ICT, so the question is probably more about the availability of electricity, i.e. the infrastructure. There are numerous ways to provide electricity, e.g. solar power or geothermal. Where there is a will, there is a way. One of the displays at the ICT for Development Platform at the WSIS was a low-wattage computer, powered by a foot-crank.

SELECTED REFERENCES

The following list includes selected references to facilitate quick access to some key publications and toolkits. It is not intended to be comprehensive. All references are also listed on the website of this book on http://www.globalknowledge.org/ict4d and will be regularly updated and expanded. Additions and comments on further reference materials and links are most welcome. Please enter them directly into the open dynamic reference lists on http://www.globalknowledge.org/ict4d.

PUBLICATIONS AND WEB RESOURCES

Building Digital Opportunities (BDO), International Institute for Communication and Development (IICD) (2004), "Lives on-line: How information technology can reduce poverty", CD-ROM, The Hague, The Netherlands

Carr, N.G. (2004), Does IT Matter? Information Technology and the Corrosion of Competitive Advantage, Harvard Business School Press

Curtain, R. (2004), "ICT and development – help or hindrance?", Australian Agency for International Development (AusAID), Melbourne, Australia
http://www.developmentgateway.com.au/jahia/webdav/site/adg/users/natalie/public/CurtainICT4DJan04.pdf

Gerster, R., Haag, A. (2003), "Diminishing the Digital Divide in Switzerland. ICT-Policies, Practices and Lessons Learnt", Swiss Agency for Development and Cooperation (SDC)
http://www.gersterconsulting.ch/docs/Digital_Divide.pdf

Gerster, R., Zimmermann, S. (2003), "ICTs and Poverty Reduction in Sub-Saharan Africa. A Learning Study (Synthesis)", Building Digital Opportunities (BDO) Programme, The Hague, Netherlands
http://www.gersterconsulting.ch/docs/Synthesis_report.pdf

Gerster, R., Zimmermann, S. (2003), "Information and Communication Technologies for Poverty Reduction?" Discussion paper, Swiss Agency for Development and Cooperation (SDC)
http://www.gersterconsulting.ch/docs/ICT_for_Poverty_Reduction.pdf

Global Knowledge Partnership (2003), "ICT for Development Success Stories, Youth-Poverty-Gender", Kuala Lumpur, Malaysia
http://www.globalknowledge.org/gkps_portal/index.cfm?menuid=201&parentid=179

Global Knowledge Partnership (2003), "ICT for Poverty Reduction in Asia, Digital Devices for the Poor", Kuala Lumpur, Malaysia
http://www.globalknowledge.org/gkps_portal/view_file.cfm?fileid=1279

Harris, R. (2002), "A Framework for Poverty Alleviation with ICTs", Hong Kong
http://www.communities.org.ru/ci-text/harris.doc

Harris, R. W. (2004), "Information and Communication Technologies for Poverty Alleviation", United Nations Development Programme's Asia-Pacific Development Information Programme (UNDP-APDIP), Kuala Lumpur, Malaysia
http://www.apdip.net/documents/eprimers/poverty.pdf

Marker, P., McNamara, K., Wallace, L. (2002), "The significance of information and communication technologies for reducing poverty", Department for International Development (DFID)
http://www.dfid.gov.uk/Pubs/files/ict_poverty.pdf

Mathison, S. (2003), "Digital Dividends for the Poor. ICT for Poverty Reduction in Asia", Global Knowledge Partnership
http://www.globalknowledge.org/gkps_portal/index.cfm?menuid=269&parentid=179

McNamara, K. (2003), "Information and Communication Technologies, Poverty and Development: Learning from Experience, A Background Paper of the InfoDev Annual Symposium December 9–10, 2003, Geneva Switzerland", The State Secretariat for Economic Affairs (seco) of Switzerland, World Bank, Washington
http://www.infodev.org/symp2003/publications/learning.pdf

Organisation for Economic Co-operation and Development (OECD) (2001) "The DAC Guidelines Poverty Reduction", OECD, Paris
http://www.oecd.org/dataoecd/47/14/2672735.pdf

Organisation for Economic Co-operation and Development (OECD) (2001), "Summary Record of the Joint OECD/UN/UNDP/World Bank Global Forum on the Knowledge Economy: Exploiting the Digital Opportunities for Poverty Reduction, OECD, Paris 5-6 March 2001"
http://www.oecd.org/document/32/0,2340,en_2649_34835_1916256_1_1_1_1,00.html

Organisation for Economic Cooperation and Development (OECD) (2003), "Integrating Information and Communication Technologies in Development Programmes", Policy Brief
http://www.oecd.org/dataoecd/2/57/20611917.pdf

Pruett, D., Deane, J. (1998), "The Internet and Poverty, Real Help or Real Hype?", Panos Institute, London
http://www.panos.org.uk/global/reportdetails.asp?id=1002&reportid=1049

Spence, R. (2003), "Information and Communications Technologies (ICTs) for Poverty Reduction: When, Where and How?", International Development Research Center (IDRC)
http://network.idrc.ca/uploads/user-S/10618469203RS_ICT-Pov_18_July.pdf

TOOLKITS

Dymond, A., Oestmann, S. (2003), "A rural ICT toolkit for Africa", The African Telecommunications Union, Nairobi, Kenya
http://www.infodev.org/symp2003/publications/ruraltoolkit.pdf

Hearn, G., Slater, D., Tachi, J. (2003), "Ethnographic Action Research, A user's handbook developed to innovate and research ICT applications for poverty eradication", UNESCO
http://cirac.qut.edu.au/ictpr/downloads/handbook.pdf

InfoDev, "Economic Toolkit and Workshops for Internet Connectivity in Africa" *http://www.infodev.org/projects/internet/010toolkit/index.htm*

International Development Research Centre (IDRC) (2004), "A Dialogue on ICTs and Poverty: the Harvard Forum" *http://web.idrc.ca/en/ev-46261-201-1-DO_TOPIC.html*

Jensen, M. and Esterhuysen, A. (2001): "The Telecentre Cookbook for Africa: Recipes for self-sustainability. How to Establish a Multi-purpose Community Telecentre in Africa", UNESCO, Paris, France *http://unesdoc.unesco.org/images/0012/001230/123004e.pdf*

ORGANISATIONS

Bellanet
http://www.bellanet.org

bridges.org
http://www.bridges.org

Development Gateway
http://topics.developmentgateway.org/ict

Eldis Gateway
http://www.eldis.org/ict/index.htm

Global Knowledge Partnership
http://www.globalknowledge.org

InfoDev, the Information for Development Program
http://www.infodev.org

International Development Research Centre (IDRC)
http://www.idrc.ca

International Fund for Agricultural Development (IFAD)
http://www.ifad.org/events/wsis/index.htm

International Institute for communication and Development
http://www.iicd.org

M. S. Swaminathan Research Foundation
http://www.mssrf.org

Oneworld International
http://www.oneworld.net

Open Knowledge Network (OKN)
http://www.openknowledge.net

Poverty Reduction Learning Network
http://www.prln.org

United Nations Development Programme (UNDP) – Asia Pacific Development Information Programme
http://www.apdip.net

World Association of Community Radio Broadcasters (AMARC)
http://www.amarc.org

World Resources Institute, Digital Dividend
http://www.digitaldividend.org