Information and communication technologies and poverty alleviation

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The role that information and communication technologies (ICTs) can play in poverty alleviation is discussed based largely on what has happened in the past six years in a cluster of ten villages in Pondicherry, southern India through the intervention of the M.S. Swaminathan Research Foundation, Chennai. If intelligently used, ICTs can make a difference to the lives of people. The article concludes with a set of recommendations and action points for governments in developing countries, donor agencies and non-governmental organizations involved in implementing micro level poverty alleviation programmes.

ICT and development

In recent years information and communication technologies (ICTs) have been deployed in numerous initiatives in rural communities in developing countries. Many world leaders, including UN Secretary General Kofi Annan, have spoken about the tremendous potential of these new technologies to transform the lives of the poor. 'Groups as diverse as the United Nations, the G8 nations, Foundations, national, State and local governments, and private companies have seized upon the hope that the use of ICTs could enable even the poorest of developing nations to 'leapfrog' traditional problems of development like poverty, illiteracy, disease, unemployment, hunger, corruption, social inequalities so as to move rapidly into the modern Information Age', according to Kenneth Keniston1, Director of the MIT-India programme. Mark Malloch Brown2, Administrator of UNDP, is convinced that 'ICT can help us reach the targets established by world leaders at the Millennium Summit, including the goal of halving poverty by 2015'. Are these hopes over-optimistic and have such comments led to high expectations?

As recently as 2001, there was considerable skepticism about the advisability of investing on ICTs among international donor agencies. As pointed out by Brown2, in both developed and developing countries, there is still considerable skepticism as to whether providing access to information and communication technology can play a significant role in reducing poverty. According to Alfonso Gumucio Dagon3, development communication specialist, 'there are too many examples of (ICT) projects that are only bombarding the Third World with computers, in the most irresponsible manner and for the benefit only of hardware and software companies'. Among the hundreds of projects that he examined, Dagron found only a handful of 'experiences of use of new information and communication technologies that are paradigmatic in the way they contribute to development'. With such a poor record, one cannot really blame the skeptics. As Kofi Annan4 has noted, 'the gap between information “haves” and “have-nots” is widening, and there is a real danger that the world's poor will be excluded from the emerging knowledge-based global economy'.

Unfortunately, there is so much hype about so little achieved. The number of conferences on ICTs for development is increasing out of proportion to what is actually being done in the field. If the energies and funds invested on these conferences were directed at real grassroots level work, we would have had many more examples of successful projects and happier communities.

What is poverty and what can ICTs do to help the poor?

According to the World Bank5, 2.8 billion people live on less than US $ 2 per day, and 1.2 billion or one-fifth of the world's population lives on less than US $ 1 per day. Although international development agencies would like to halve the population of the ultra-poor by 2015, the situation seems to be worsening. 'Not only has absolute poverty and life-expectancy worsened in a disturbingly large number of countries, but by almost all measures, inequality has worsened, both within and between countries', according to Raphie Kaplinsky6, Institute of Development Studies, University of Sussex.

Poverty is much more than the mere absence of money. Often, generations in poverty lead people to a sense of utter hopelessness and rob them of their sense of self-respect and dignity. They find themselves in a cul-de-sac, not knowing how to get out of the poverty trap. They are deprived of access to essential assets and opportunities such as education, healthcare, employment, land and other natural resources, services, infrastructure and credit. They have little say in their polity and society. They are not empowered to participate in making the decisions that shape their lives. They become increasingly marginalized, excluded and vulnerable to exploitation. This exploitation manifests in several forms such as bonded labour,
child labour, inadequate compensation for work if and when they get work, ill treatment and deprivation of basic rights. It will be naïve to believe that we can solve the problem of poverty by providing access to computers and telecommunication to the poor of the world.

Let us look at one research project (at the micro level) that has successfully used ICTs in rural development and the lessons learnt.

Anatomy of success: The Information Village Research Project

What makes a project successful? Are there well-defined prescriptions for success? While it is difficult to define a fixed set of criteria for success in ICT-enabled development projects in different parts of the world, it is clear that emphasizing technology cannot bring in success. Rather, development projects should be people centred. The Information Village Research Project of M.S. Swaminathan Research Foundation (MSSRF), Chennai has attracted the attention of the world and has won the Stockholm Challenge Award and the Motorola Dispatch Solution Gold Award. It has been widely talked about in international media. It is basically a people's project, where it is important for the project implementers to get to know the local people, their context and their needs (and wants) before they can make any meaningful intervention with or without the use of technology.

It is an experiment in electronic knowledge delivery to the poor. MSSRF has set up knowledge centres in ten villages near Pondicherry, southern India and connected them in a hub and spokes configuration by a hybrid wired and wireless network – consisting of PCs, telephones, VHF duplex radio devices, spread spectrum and e-mail connectivity through dial-up telephone lines or VSAT – that facilitates both voice and data transfer, which enable the villagers to get the information they need to improve their lives. We use wireless links to connect villages without telephones. We use solar energy to run our computers so that we can provide our services even during power failures, which are frequent in these villages. The hub located at Villianur, a small town 13 km west of Pondicherry, serves as the value-addition centre. All the knowledge centres are open to everyone irrespective of age, sex, religion, caste, and level of literacy and education. No one is excluded. The centres provide information on such aspects as crops, farm practices, animal husbandry, market prices, education, health, employment opportunities, government entitlements, weather, fishing conditions, bus timings, micro-enterprises and rural yellow pages. About 50,000 people living in these villages benefit from this programme. The project, supported by International Development Research Centre and Canadian International Development Agency, draws its sustenance from Gandhi’s concept of _Anthyodaya_ (unto the last). The project is conceived in a holistic manner and emphasizes an integrated pro-poor, pro-women and pro-Nature approach to development.

Because it would be impossible to provide the same level of access to ICT tools to all the people in the world as is currently the norm in the affluent countries, we thought of a more practical model: community ownership of technological tools, community-based access, and resource sharing. The community provides quality space and electricity, and nominates volunteers while MSSRF provides the technology, training and managerial help. We use the local language, i.e. Tamil, and multimedia (to facilitate use by illiterate users) and encourage collective action. We do not use technologies simply because they are there; we use them only when there are specific needs that they can address. We also use blackboards, billboards, public address systems and a twice-monthly community newspaper to reach out to a broad spectrum of people. One of the strengths of the project is the judicious blending of traditional and modern technologies.

The bottom-up exercise begins with local volunteers polling the community to find out what they want and what they already have. The initial survey of several thousand households in the region revealed that there were few public access telephones, reading rooms or libraries and post offices. We trained local volunteers to collect information from different sources, such as the nearby meteorological office, markets, government departments, primary health centres, educational institutions, and traders selling seeds, fertilizers and pesticides. We now have about 100 databases, which are updated frequently. The information is fed into an intranet-type network, and access to the information is provided through nodes in different villages. Each centre is manned by at least two volunteers at any given time.

The project also looks for useful information from elsewhere. For example, twice a day volunteers at the Villianur hub download forecasts on wave heights in the Pondicherry coast from a US Navy website <https://www.navy.mil/LIBRARY/Metoc/Indian-Ocean/Bay+of+Bengal/MODELS/SWAPS/Sig_Wav_Ht+and+Dir+Series/index.html>. The volunteers interpret the information, prepare a written statement and a sound byte, and transmit them along with the satellite image to the knowledge centres in coastal villages through the network. The volunteers in the coastal villages post the printout of the satellite image and the forecast statement on the centres’ bulletin boards and broadcast the sound byte through public address systems several times a day for the benefit of fishing families. The loudspeakers are located in such a way that everyone in the village is within hearing range. Not only do the fishermen hear the announcements, but also their families. (On days when the menfolk are advised not to venture into the sea, the women also hear the announcements and are in a position to tell their husbands not to go out but to stay home and do some household chores!) Ever since the knowledge centres started making these
announcements, there has not been a single death in mid sea nor any loss of boats or nets due to foul weather. People of Veerampattinam, one of the coastal villages, consider this to be the greatest benefit that they have received from the knowledge centre.

The knowledge centres serve the needs of the people in times of emergency as well. Once a villager came to one of the knowledge centers with a request for identifying donors of a rare type of blood for a critically ill patient. A message was sent out over the network immediately and volunteers at the different knowledge centres alerted the local communities. A number of people came forward to donate blood. On another occasion a cow was in labour for several days, but was unable to deliver the calf. The owner was worried that the cow, her only asset, might die. A message was sent to the nearest knowledge centre, and the volunteer there contacted several veterinarians in the region and one of them came to the village and delivered the calf and saved the cow.

Value addition to the raw information, use of the local language and multimedia (to facilitate illiterate users), and the participation by local people right from the beginning are some of the noteworthy features of the project.

About 300 users walk into these centres on an average day. They get answers to their queries, use computers (for typing documents, filling in forms, playing games, learning from educational CD-ROMs, etc.), read newspapers and make telephone calls. Work at the centres is monitored through monthly participatory appraisal meetings in which MSSRF staff, knowledge centre volunteers and community representatives take part. All centres maintain user registers.

The centres have been running for more than six years, and as we go along we open new centres and add new databases and extend the range of our services.

Lessons learnt

Of course, it is easy to list both the achievements and lessons learnt from hindsight. These were not so obvious in the early days of the project, when we were trying to understand the basics of transforming the lives of the rural poor through the use of information and information technology. It was like any research project. When we start work on a difficult problem, we hardly know much and we tend to grope in the dark and try different leads, but as we progress many things become clear. The important lessons that we have learnt are listed in no particular order.

We owe our success to our clear vision. Swaminathan asked, ‘If ICTs can benefit the advanced countries and the rich everywhere, why can’t we press them into service to help the poor?’ He did it at a time when there was considerable skepticism among donor agencies on investing in ICTs. He believed that we could use ICTs as a cross-cutting theme in other sectors like agriculture, health and education, and the results proved us right.

The project was bottom up and participatory right from day one. In most villages, the demand came from the people. The relation between MSSRF and the village community is one of partnership in progress, and not donor and recipient. The entire village community – a wide cross-section of men and women, landed gentry and the landless, educated and the illiterate – was consulted and involved. We adopted a policy of ‘inclusiveness’. Appreciating this aspect of our programme, Bruce Alberts, President of the National Academy of Sciences, USA, said, ‘My experience in India has made it clear to me that our nation would be much more successful in such endeavors if we were humble enough to incorporate the potential beneficiaries of a service into its initial planning’.

What is more, we built in gender concerns right from the beginning. Early on in the project, a gender specialist was invited to conduct a workshop for the women in the villages. The village volunteers do much of the work, and more than half of the operators and volunteers providing primary information are women. This has positively reflected in the increase in the number of women users. Handling of PC and answering men’s questions give women new confidence and status in the community. Some knowledge centres provide counselling to women. As mere information or knowledge cannot lead to development, the centres provide assistance to the community in seeking employment, setting up self-help groups and micro-enterprises, and getting micro-credit. Many women have formed self help groups (SHGs), paying monthly subscriptions. They borrow money from the SHGs, especially for education of their children and starting cottage industries. The interest on the money borrowed accrues to the SHGs. The knowledge centres help women get training related to economic opportunities such as incense stick manufacturing, pickle making, phenyl and soap oil production and making ornamental artifacts from seashells.

In the beginning we were not sure how long would the village volunteers, many of whom had finished only middle school education, take to learn to use computers and to operate the associated communication devices. We were surprised at the speed with which they learnt. Many of them are fluent in typing text in Tamil, which has more than 240 characters, using the standard QWERTY English keyboard with 26 characters. As Swaminathan often says, they took to new technology as fish to water. Now these volunteers are training others in the villages to learn to use computers.

Another lesson that we learnt was that the content should be relevant to the local needs. While interest in ICT-enabled development is mushrooming and thousands of telecentres have been planted during the past six years and millions of dollars have been invested in buying computers and ensuring Internet connectivity, there are only a few projects that are really useful for the local communities where they have been set up, in terms of supporting development and social change. ‘A good example of tele-
centers that really care about providing appropriate information to their constituency is the network known as Village Knowledge Centres, set up by the Swaminathan Research Foundation. The concept is articulated around community needs, not the opposite", reports to Dagron. The village knowledge centers in Pondicherry are such an important and coherent experience, largely because of the development of local databases and local web pages that are relevant to the people and that take into account their daily needs, their culture and their language. If this is not embedded into a project, it cannot have any positive results for the community. "While most telecenters that have failed to deliver are like Cadillacs in rural areas, the Swaminathan "knowledge centres" are like barefoot doctors and the Green Revolution, both of which have delivered and are appropriate to their contexts", says Dagron. In developing local content we do consult experts in agricultural universities, premier hospitals, government departments, etc.

It is important to use the right technology to achieve specific goals. We use a mix of technologies and the mix has to be smart enough to meet our objectives. We also need to train the local volunteers in their use. Thus we manage social mobilization on the one hand and technology management on the other, and bring these two together to reap maximum synergy. We have an open mind on technology. In the beginning we started with somewhat high-end technologies such as interconnected computers and communication technologies, but we found that even traditional technologies have an important role to play. For example, information on wave height that we download everyday from a US Navy website reaches the fishermen through a public-address system. We also use blackboards and billboards at our centers to display the latest news and announcements. Simply because something is old, it does not lose its value. And the latest and most advanced technology may not be relevant to local needs. Although it is possible to access Internet from five of our knowledge centers, the local communities do not use the facility often, as it does not provide answers to many of their questions. Indeed they use Internet only for limited purposes, especially for accessing examination results, employment news and information from Central government departments. Answers to most questions are provided from information collected by our staff and the team of volunteers from mostly local sources. The community newspaper (Our Village News) that we publish twice a month, is read avidly by many. We now print 7500 copies of this free newspaper and distribute it in over thirty villages. The impact of this newspaper has exceeded our expectations. People from neighbouring villages have started coming to the centres and want to use the services provided, especially advertising their products and services. The newspaper has made our knowledge centres better known in the entire Union Territory of Pondicherry. Within two days of release of the first issue in February 2002, more than 60 people contacted the knowledge centres. Many villagers find our newspaper refreshingl different from the commercial newspapers and magazines that devote considerable space to news about crime and violence, politics and international affairs.

To be successful a project has to be integrative. Merely providing information using tools of ICTs is not enough. It has to be accompanied by other activities that will ensure the creation of livelihood opportunities and greater income levels for the community. After all, information is only one element in the development process. To get optimal results and reap the benefit of synergy, we need to integrate it with other key elements. The trick is to figure out how best to use ICTs to leverage efforts in each aspect of poverty alleviation - improving healthcare delivery, agriculture and animal husbandry, capacity-building, creation of livelihood opportunities, organizing micro-credit and micro-enterprises, and ensuring that people get their entitlements.

Managing ICT for D programmes

The project calls for considerable managerial skills. On the one hand, we have to mobilize the entire population of the many villages that we work in and get accepted by them. That is quite a task. We need to liaise with government officials, local institutions, traders and a number of others. We need to form self-help groups, help in setting-up micro-enterprises, arrange micro-credit, and help market the products coming out of these micro-enterprises. We must build partnerships with other institutions such as government offices, hospitals, agricultural universities, research centres and field stations, markets, etc. to have a constant flow of relevant information. Above all, we must work out a smooth withdrawal strategy, ensuring that the knowledge centres, self-help groups, micro-enterprises, etc. will continue to function and with greater efficiency, after we withdraw.

Widespread access to information can lead to changes in social equations. For example, many villagers are now aware of government entitlements and they go and ask for them. The officials are now receiving more inquiries and more claims than ever before. In another example, landlords who pay a part of the wages to their landless labourers in kind can no longer give lower quantities of whatever they are giving in kind, as the prices are known to everybody. The officials who are bombarded with queries and the landlords may not like what is happening. There have, in fact, been occasions when certain landlords have brought in labour from outside the village when the local labour demanded the right quantity of rice given as wages in kind. Situations like this require considerable tact and persuasive skills to sort out. In the early phase of the project, three knowledge centres set up at private residences had to be closed, as the services did not reach all sections of the people in the village and were monopolised by the relatives and friends of the residents.

Often people ask about 'enabling conditions' or 'environment' that can facilitate development projects achieve
their goals. Development agencies should work to create the enabling environment. As our early surveys revealed, most people in the villages that we work with were poor and there were hardly any telephone or reading room. We worked towards community ownership of technologies and the knowledge centres facilitated the creation of social structures such as self-help groups and helped them obtain the much-needed finance. If the conditions are favourable, then where is the challenge for the development agency?

Sharing experience

Donor agencies are keen that lessons learnt and experiences gained in such projects should be disseminated widely and replicated in different parts of the developing world. We are fully aware of this need. Indeed, in October 2002 we conducted a South-South Exchange Travelling Workshop with the specific purpose of sharing the knowledge and experience of different development projects.11 We invited 21 participants from 11 countries for this pioneering event and all of us spent seven days together, two at MSSRF headquarters in Chennai and the rest of the days in our project villages. Participants met and spoke to the village communities, volunteers and field staff of MSSRF in a dozen villages and exchanged notes. The discussions that took place were lively and animated. Such face-to-face meetings and hands-on demonstrations by local people were found to be extremely useful by all participants as well as by the village communities. Financial support for this Workshop came from Humanist Institute for Cooperation with Developing Countries, The Hague (HIVOS), International Institute for Communication and Development (IICD), The Hague (HICD) and International Development Research Centre (IDRC), Ottawa, Canada. These organizations also selected the participants from among their partner organizations. The second South–South Exchange workshop was held during 30 October–6 November 2003. Nineteen participants from 12 countries took part, with financial support from Global Knowledge Partnership. The third workshop will be held during 15–22 October 2004.

In March 2002 we joined hands with One World International in an experiment on creating an Open Knowledge Network (OKN)13, in which we tested the possibility of connecting many villages in different continents using WorldSpace radio and exchanging information – both uploading information from each centre to one of the WorldSpace satellites and downloading the information onto a WorldSpace radio and jacking it up to a PC, where using XML filters one can download the information relevant to a particular village or community. Subsequently, OneWorld has carried out a similar pilot experiment in Africa and the next step is to link villages in the two continents. The OKN was officially launched by Swaminathan during the World Summit on the Information Society held at Geneva in December 2003.

A large number of researchers, students, experts from international agencies, and journalists have visited our knowledge centres and written about our work. And we have been invited to talk about our work at many national and international conferences and workshops.

Alberts, who has visited our project villages three times, sees in this experiment the seeds of a virtual university. He sees the knowledge centres as a bridge between scientists and the rural communities. Not only can the rural people forward their questions to the experts but also their insights that could be useful to the scientists in formulating their own research. In 2003, MSSRF set up the National Virtual Academy for Food Security and Rural Prosperity. Initially we will be working in about a hundred villages in three districts of Tamil Nadu, viz. Thanjavur, Pudukkottai and Dindigul. The knowledge centres in these villages will facilitate two-way communication between the local communities and experts. For this purpose, MSSRF has entered into partnership with a variety of institutions ranging from Central Government departments (such as Space and Meteorology), universities (Tamil Nadu Agricultural University), research laboratories, field stations, veterinary colleges, and NGOs.

We have been invited to set up similar programmes in Andhra Pradesh, the remote hilly tracks of Ladakh, the Northeastern States, Orissa – one of India’s poorest states, and Rajasthan. In October 2003, we held a two-day policy makers workshop. About 70 participants drawn from the government, NGOs, academia and corporate sector took part and came up with some useful recommendations. Plans are afoot to extend the Pondicherry experiment to the more than 600,000 villages in India in collaboration with open universities and NGOs.

Need for caution

Surely there are other projects that accomplished excellent results, but certainly not many. Also one has to be cautious, as often rigour is lacking in evaluating such programmes. Recently, the Christian Science Monitor reported that Little Information Communities (LINCOS), a project intended to help the poor in Costa Rica, ended up helping the well-to-do.15 According to LINCOS business director Marvin Cabezas, ‘LINCOS’ main contribution to the region has turned out to be commercialization of products, encouraging people to sell directly outside the country and to take risks. LINCOS has now revised its strategy; from now on they will aim to help local business people.16 According to Richard Heeks,15 ‘At present ICTs are reinforcing more than attacking inequality: men are benefiting more than women and the rich are benefiting more than the poor. The challenge is to create conditions for reversing the polarities; but that is a challenge for social movements more than computers’. Institutional documents and ‘success’ reports often are at variance with reality. According to Dagon,16 ‘One thing is what is written in project reports, and another thing is what is really happening at the community level. Definitely, the tool is still to be shaped. Let’s not forget that most of the ICT experiences at the grass-
roots level are only 4 or 5 years old. It is too soon to claim victory and too soon to discard them, but not too soon to question them and to make sure that they will be sustainable and for the benefit of communities after the external assistance withdraws. Communities should adapt technology to their needs and to their culture, not the opposite. As of today, the ICTs in our Third World countries are only “experiments with a potential”.

This is not the first time we are confronted with the idea that technology is the panacea for development. The previous wave of ‘diffusion of technology’, which was supposed to help the underdeveloped countries magically join the industrialized world through the use of modern technology graciously provided by the international cooperation agencies, failed miserably.

In his Presidential address to the Fellows of the US National Academy of Sciences, Alberts9 said, ‘I learned to my surprise that most of the international organizations established by the United Nations with the great hope of using science and technology to improve the human condition are seriously hampered by bureaucracy and a lack of energy, innovation, and resources’.

Realizing that throughout history technology, left to itself, has invariably exacerbated the rich–poor divide and recent attempts to press ICTs in service of poverty alleviation have not been all that successful, we should try to identify appropriate ways of applying ICTs at the micro, macro and intermediate levels and create the enabling environment that would guarantee the appropriation of these technologies and the programmes by the poor themselves. These include community ownership of technology, promotion of the concept of public commons and the use of open source software. As information by itself cannot be the magical cure for poverty, we should embed ICTs within integrated development strategies for combating poverty so that both achieve their optimal effect, and avoid the mistake of putting the technology cart ahead of the need-based development horse. Donor agencies should not judge the sustainability of ICT-enabled development projects merely in financial terms, but by social benefits. If financial viability is the main criterion of success, most projects will turn their attention to making money and abandon their social goals. Also, stand-alone projects can hardly make any impact. Instead, donor agencies should facilitate creation of sector-wide capacities and implement large-scale programmes. The potential supportive role of ICTs (and their limitations) should be incorporated in the Poverty Reduction Strategy Papers17. It would help if donor agencies work in unison, and therefore formation of groups like Utstein18 OECD–DAC should be encouraged. Recognizing that many multilateral agencies have been ineffective and far from being cost-effective, priority should be accorded to make them efficient and to bring down their transaction costs. After all, funds earmarked for poverty alleviation and development should enrich programmes at grassroots levels and not go to meet the excessive pay and perks of officials and experts. Donor governments should be persuaded to raise their quantum of aid to developing countries, adopt pro-poor trade policies and refrain from exchanging the aid money for arms and ammunitions.

Recommendations

- We must realize that ICTs are a necessary but insufficient condition for development, and that they must be used as part of integrated development. National ICT strategies must be subordinate to poverty alleviation strategies.
- As left to themselves ICTs will only exacerbate the rich–poor divide, efforts should be made to create an enabling environment that would help the poor take advantage. If we address the problems of the poorest, the problems of the rest will be taken care of automatically.
- Recent experience, limited though it is, has shown that we should create the enabling environment for ICTs to deliver optimal results and to facilitate increased information and communication flows. ICTs mean much more than computers and the Internet, and many technologies, both traditional and modern, can play a role in appropriate situations.
- To the extent that the knowledge gap is an important determinant of persistent poverty, we should encourage greater communication and information flows both within and between countries. To the extent that information is critical to development, we should use ICTs in the best possible way to share information and achieve this greater interaction.
- We should be clear on the development and information delivery strategies before deciding on the technology. We should not make the mistake of putting technology ahead of the community needs, and resist the considerable pressures from corporations and their countries' governments to push their technologies.
- Donor agencies should shift the focus from bridging the digital divide to poverty alleviation. Indeed the digital divide is a reflection of broader socio-economic inequalities, and a symptom of much more profound social and economic divides.
- Donor agencies should work in unison to maximize the return on their investments, avoiding duplication of effort and supporting larger programmes nationwide (or even worldwide).
- We should learn to discriminate between genuinely good programmes and mere hype. We must learn from successful projects and try to replicate the factors that led to their success. We must encourage bottom-up and demand-driven programs, and the involvement of local communities from the outset.
- The investment of government and corporate money into computers and technology infrastructure has not been matched by a commensurate investment in the creation of relevant and engaging content or appropriate
human resources. Not much has been done to show the rural poor how ICTs could be of value in their lives. Such imbalances should be redressed.

Action

Donor agencies

1. Encourage a favourable environment for ICT-supported programmes in partner countries – including freedom of expression, transparency, accountability, community ownership of technology, the public commons, and open source software.
2. Examine ongoing programmes – focusing on the significance of actual experiences, and identify good practices and success factors.
3. Encourage mutual learning by supporting, for example, South-South exchange workshops, and building partnerships and networks (e.g. IDRC’s PAN Asia network).
4. Encourage the evolution of home-grown models and avoid the tendency to transplant Western models based on an oversimplification of reality.
5. Evolve systems for evaluating and monitoring ICT-enabled development programmes and avoid heaping praise and awards on programmes too early. Involve people from developing countries in advisory bodies (as IICD has done).

Governments in developing countries

1. Facilitate participatory democracy, starting from the grassroots, and tilt policies in favour of cooperation and complementarity between different segments of society, rather than competition.
2. Encourage transparency in government and pro-poor policies, create social opportunities, and ensure fulfilment of basic entitlements to the poor.
3. Liberalize communication policies that create space for community radio (and television) broadcasting.
4. Facilitate the spreading of ICTs, especially computer literacy, low-cost telephony and high-bandwidth Internet, if necessary through subsidy for users in rural and remote areas.
5. Facilitate the integration of ICTs in all development projects, e.g. by supporting the formation of self-help groups, micro-credit and micro-enterprises, capacity-building, e-governance, etc.
6. While negotiating with international (bilateral and multilateral) donor agencies, include ICTs as a key component of the Poverty Reduction Strategy Papers.
7. Encourage the corporate sector to take an active part in ICT-enabled development. ICT’s e-chaloops in India have made a mark in a short time. The Tata group’s literacy initiative is another example of corporate involvement.

NGOs

1. Choose projects with care, based on a correct appraisal of the needs of the constituency and the skill base of the organization. Have a clear vision of the objectives and the roadmap. Involve the community right from the beginning and ensure community ownership and participation. Considerable hand-holding is necessary in the early stages.
2. Choose the right funding agency (one whose mandate matches your project objectives). And if you need to work with other NGOs/Civil Society Organizations, choose the partners carefully paying attention to their programmes and areas of strength.
3. Be ready to learn from the experiences of others and to share your own with others. Keep abreast of developments related to your projects. Be ready to work (whenever needed) with the government, other institutions and individuals.

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