Gender Perspectives on the Information Society
South Asia Pre-WSIS Seminar 2005

18th – 19th April
Bangalore

USING ICTS TO BRIDGE THE DIGITAL DIVIDE

Usha Vyasulu Reddi and Rukmini Vemraju

Commonwealth Educational Media Centre for Asia, New Delhi

IT for Change
with Development Alternatives with Women for a New Era and Centre for Public Policy, Indian Institute of Management - Bangalore
supported by UNIFEM and UNDP-APDIP


itfc


DAWN


IIMB
तेजस्वि नावधीतमस्तु


UNIFEM


UN
DP
APDIP

ABSTRACT

Current literature on the use of Information and Communication Technologies (ICTs) to address core issues of development swings like the pendulum either to excessive optimism and support or to extreme cynicism and critique. At one level there is misplaced hype and hope that the technologies promise; at another level are the findings from the field which show great variance in results.

One can look at the issue from a variety of perspectives. What is important is that while the technologies offer us the opportunities to adopt, adapt, and use in appropriate ways, it is the conditions of use that determine the success and failure in meeting developmental goals.

Two cross cutting dominate global development agenda today. The critical importance of gender and the inclusion of women and girls in the process of development is one such theme. The second relates to the importance of using information and communication technologies to accelerate the development process. Do the two come together? If so, how?

These are the questions that this presentation will address. We will examine several cases of good practice to identify the "principles of good practice" and then apply such principles to project design and implementation so as to assess critical points where attention is necessary but often forgotten.

USING ICTS TO BRIDGE THE DIGITAL DIVIDE

1. Introduction

Communication as a discipline of study has emerged during the second half of the 20th century. Compared to other fields of knowledge, it is still a young field and draws its knowledge base from several disciplines. As communication professionals and researchers from developing countries, it is our primary responsibility to examine communication processes and information and communication technologies (ICTs) and their relationship with the global development agenda, and to redefine our roles within the new contexts.

We use the term communication instead of ICTs. This is because communication is a broader concept and consists of a whole set of concepts, processes and evaluation methodologies. ICTs are a subset of communication and are essentially tools that are used by communicators to address specific needs.

2. Unpacking the concepts

2.1 Our understanding of core development issues

In his book *Development as Freedom,* Amartya Sen (1999)[i] argues that in individual freedom lies the capacity for political participation, economic development and social progress. The goal of all development is the enabling of the exercise of such a freedom—the freedom to make a choice, and consequently the empowering of an individual so that he or she is able to make the choices that determine the quality of life.

Depending on our own disciplines, we tend to examine development from the perspective of our own training and specialization. For instance, agricultural scientists talk of food security, self sufficiency, livelihoods and growth in agricultural production. Economists study development in terms of growth rates, and incomes, GNP, GDP, and per capita income. Economists talk of international trade and the WTO and GATS; the changing dimension of societies from industrial to service based economies. Psychologists have always examined development from the perspective of the modernizing of the individual—the changing patterns of thought and behaviour that are a both an impetus to and consequence of change in any society. Sociologists study group behaviour and how groups influence change. Political scientists

look to development as a movement toward a more political participative civil society. Communication scholars study media and their development and role in a developing country. Health specialists look at improving health in societies. Environmentalists are among the most vocal protagonists of "sustainable development' and educators generally tend to examine literacy and educational indicators such as net enrolment ratios. Gender specialists look at disaggregating gender data and the role of women in a society. Philosophers and others will argue for an increase and improvement in values in society. IT specialists examine the potential of digital technologies to bring about social change. And therefore, depending on the perspective, a view of development today is also changing.

Development is really a composite whole of all of these perspectives and the ultimate purpose is close to what Amartya Sen's perspective of development as freedom, reflected both at international debates and in the Millennium Development Goals[ii] accepted by the world community and which are to

- Eradicate extreme poverty and hunger
- Achieve universal primary education
- Promote gender equality and empower women
- Reduce child mortality
- Improve maternal health
- Combat HIV/AIDS, malaria and other diseases
- Ensure environmental sustainability
- Develop a global partnership for development

Alongside the Goals, a series of 18 targets were also drawn up to give the international community a number of tangible improvements to aim for within a fixed period of time, and also make it easier for them to measure their progress to date.
The intention is that almost all of these targets will be achieved by 2015. Unfortunately, while some significant progress is being made towards meeting some of the targets in some of the affected countries, in many cases progress is patchy, too slow or non-existent.

It is within this context of development as it is perceived today that we place this discussion and debate.

2.2Our understanding of gender issues

That gender, as an issue, is a cross cutting theme in all global development concerns and debates, is an accepted fact. The two historic meetings at the beginning of the 21st century, the World Education Forum in Dakar, Senegal, and the Millennium Summit of the United Nations recognized this as they did the key interim objective of achieving gender parity in primary and secondary school enrolment by 2005.

What is important to recognize is that gender issues must be and are situated within a broader context of human rights—"rights to, rights within, and rights through" in all areas of human endeavour. And the pathways to achieving such rights are many, and in all sectors, but there are inter-linkages both within the female life cycle and in social relationships that must be explored and addressed in a holistic fashion.

Illiteracy, poverty of resources and time, absence of mobility, socio cultural factors, lack of appropriate and relevant content, are among some of the conditions that prevent girls and women from accessing educational and life opportunities. Barriers can also include geographical and social distance, the juggling of social demands and the lack of support and cultural expectations incompatible with education and social growth, where education is defined, not as only the formal type, but basic, continuing and lifelong in nature.

2.3Our definitions of Communication, the ICTs and the digital divide

Two dimensions of the relationship between communication and development merit mention here. One is the broad and **general relationship** between communication and development. The second dimension is **development support communication**.

<u>The general relationship</u>

The potential use of communication to meet the challenges of development started with the pioneering studies in the 1950s and early 1980s. Lerner's[iii] pioneering study that showed the link between communication and modernization of individuals in Turkey, was followed by a large number of studies in the early 1960s, and an equal number of projects where the role of communication was tested in developmental settings. The Radio Rural Forums of the 1950s and the classic study by Rogers and Shoemaker[iv] set the stage for the incorporation of communication as a critical element of development programming. At the same time, the UNESCO and Schramm[v] led initiatives emerged in different parts of the world when countries such as

India, Mexico, and China invested heavily in the use of media for educational and developmental purposes.

Much of the experimentation in the first two decades of development, i.e. the 1950s and 1960s focused on trying to understand the relationship between the two aspects. However, results from the field often yielded contradictory results—much at odds with planners' expectations and have, consequently added to the debate on effective use. The conflicting results did not challenge the general link between communication and development; they did, however, give rise to the more action oriented **development support communication** perspective

Development Support Communication

Development support communication essentially refers to the use of communication to support the development process, either at a national or location and project specific level. Specifically, it is the integration of communication (and in today's parlance) the use of ICTs as part of the planning, design, development, delivery, and evaluation of developmental projects. This could mean large scale experimentation as in Mexico's Telesecundaria[vi], Brazil's Telecurso 2000[vii], and India's Satellite Instructional Television Experiment (SITE) and post SITE endeavours. It could also mean small scale experimentation and use as in community radio initiatives globally or in the current use of multipurpose telecentres located in remote villages[viii]. And despite several decades of such support, the debate about ICT use in development continues because supporting research in media and development has not yielded any conclusive results about relationship between the two.

The ICTs.

Many of the questions raised about the effect of technology are multidimensional, reflecting world society in all its diversity and complexity.

If ICTs are seen as the main drivers of contemporary society, then it is expected that these technologies will effectively terminate a social structure based on inequality. These new technologies appear to have an impact upon the economic, political, and social systems existing today.

Protagonists argue that ICTs will remove the tedium from life, giving the individual leisure during which he/she can choose to better one's life. The

social and cultural impact of technology is greater than that of the hardware alone. The use of ICTs refers to the systematic application of collective human rationality to the solution of problems by asserting control over nature and over human processes of all kinds. What is included are not simply machines but the collection of transferred attitudes values, institutions, social and political structures, new management patterns, new training and human resource deployment requirements as other varied inputs which are required sometimes simply for the use of the technologies. What is clearly evident in the current global scenario is that the new developments have already increased the already substantial potential for control of information in traditional world centres. These patterns of control have exacerbated, rather than reduced the growing disparity between the 'haves and the have-nots'

The growing disparity was studied in the 1970s by Tichenor and others[ix] who called it the "knowledge gap" between those with access to knowledge and those without. Today, it continues to be hotly debated and is called the growing 'digital divide'.

The digital divide.

Hamelink (1986)[x] and many others since have argued that the perceived notion of the information society is that it is decentralized, with greater access to information for all segments of the population, and a shift of power structures away from the governing elite to the masses and proponents of the new technologies point to the ways in which the new technologies could encourage and foment the process of democratization of societies. Perhaps this shift took place in earlier social revolutions. There is no indication that such transformations will take place unless there is a paradigm shift in the way in which the technologies are deployed and used.

What has happened is that national boundaries have been reduced to lines drawn on maps, independence has become interdependence and those who have access to knowledge remain the better off as the divide seems to grow rather than narrow.

Agrawal (1986)[xi] has argued that there is a differential access to media in developing cultural gaps. Cultural elite are at the apex of a social hierarchy, while the poor are at a bottom. Access to information technology can be represented by an inverted pyramid where, because of the very nature of the technology, elite have greater access to the media than the poor. When the inverted pyramid of technology access is superimposed upon the cultural

hierarchy structure, the culture and knowledge gap between the rich and the poor widens, refuting hopes of planners seeking to use the technology for development. Given that women are at the poorest and most discriminated end of the divide, it is they who will be the worst affected in a globalized world where only the fittest will survive.

Twenty years since these discussions took place, the debate still continues. Technological changes and their use for development have grown exponentially since. But the questions remain. This may be perhaps not because of the ICTs themselves but in the conditions of their application—and that is what we will seek to explore when examine global cases of using ICTs for meeting developmental goals.

The twenty years have, however, yielded a wealth of experience and knowledge on the conditions in which innovations in ICTs can be introduced and deployed in a society. The focus has shifted away from a perception of the beneficiary as the poor, passive and unwilling recipient of innovations to the innovations themselves to beneficiaries who are now perceived as active participants and users. As we explore case studies where the use of ICTs for development has failed or worked; we will examine the conditions of use.

3. Factors impinging upon ICT use in development.

We mentioned earlier that the use of technology was not the mere deployment of hardware but the collection of transferred attitudes values, institutions, social and political structures, new management patterns, new training and human resource deployment requirements as other varied inputs which are required sometimes simply for the use of the technologies.

Current literature on barriers to the use of ICTs for developmental purposes, especially among women and girls, draws attention to access and control, content, delivery methods, project implementation, and patterns of management in design and deployment of technology and content. Technology is most often not the issue—as various technological options are available today and given the current rate of growth in telecommunications in most parts of the world, availability of IT infrastructure to even the remotest regions is no longer a distant dream. What has made today's technology different is the coming together of the satellite and the computer and the convergence between traditional and new media through a process of digitalization and the consequent driving down of costs of technology.

3.1 Whom the technologies are meant for

A first myth is that today's ICTs enable us to transcend barriers of reach and provide access. For whom, one might ask, and if tele-density data are any indicators, it is the rich getting richer. For technologies to reach out there has to be access and not merely reach

The reach of any medium is not the same as access. Figures that indicate 100 per cent reach of radio means only that the signal reaches, not that the listeners have access to the medium. The fact that there is a public telephone of Community Learning Centre or television in a public location does not mean there is access, if a woman has to walk four kilometers to use it or in cultures that do not encourage use of public spaces by women.

In addition to physical and socio cultural factors, poverty, illiteracy, time, mobility, and relevance are key factors influencing access of women to technology. It is when these concerns have been addressed such as in the Grammen Phone initiative of Bangladesh[xii] or in the Secondary School Education Project in Pakistan[xiii] that women have found their own way to livelihood and education.

It is my argument, therefore, that for ICTs to work to address developmental issues for women and girls, that have to be situated, physically and socially, in such a way as to enhance, rather than limit access to those for whom they are intended.

3.2 Who owns the technology?

A second myth about technologies is about people and that it is necessary to be computer literate in order to use today's ICTs—which is why ownership and control of technology remains with the implementing agency rather than with the beneficiary. There is enough evidence emerging out of experience to show that this myth has no basis in reality.

When ownership and control over technology has been transferred to the potential beneficiaries, dramatic results have emerged. In 1986, Subhadra Belbase reported that when women develop their own video material son issues of water pollution, health and sanitation, women's own abilities to identify their needs, articulate their concerns, and to suggest local solutions and even to speak up to government functionaries grew and self confidence and empowerment resulted.[xiv]

Similar results among women have been reported in the Pastapur experience of the Deccan Development Society[xv], in the COLLIT India Project[xvi] and the Kutch Mahila Vikas Samiti, Gujarat[xvii]. The 'phone ladies' of Bangladesh have also been similarly empowered and in Budikote, Karnataka, Sitakund in Bangladesh, empowerment has resulted[xviii]. Significant because in all of these cases, it was illiterate and semi literate women (definitely not media literate) who used the technology to address their own and their community needs.

It is therefore my argument that ownership and control of the means of communication bring involvement and commitment. They enable women to use the technologies to give voice to their own needs and to create their own materials. And when ownership and control is transferred to the women, the likelihood of change is greater and the ICTs break down barriers when technology is demystified.

3.3 Who determines and creates the content

Yet another misconception about ICTs is that content is readily available, and if not, that it is easy to develop. There are two aspects of content development that merit special attention. First: relevant, timely, local and **gender sensitive and gender friendly** content is simply not available. Our experience show that content takes time and costs money to produce. Second: who determines what is relevant, timely and local? Unless it is the beneficiary, there is little or no chance of ready use.

If adults and children have different learning styles, women learners are different. Much has been written about the collaborative nature of their learning, and in many a learning context, the interactive, participatory involvement of learners appear to contribute to success.

Content development strategies must match the learners' learning processes and must include partnership in the process of learning; and very often, there is a mismatch between expectations of the project managers and the learning styles of the target beneficiaries. When it comes to addressing the needs of women and girls, it is also necessary to ensure a gender sensitive programme design, in the choice of delivery media and social mobilization and participatory processes. Warr (1992) described the principles on which the Basic Functional Education Programme at the Allama Iqbal Open University in Pakistan was based—learner centred (knowledge relevant to

village learners presented from their perspective, of practical value and with a multidisciplinary approach); with a multiple media approach to minimize dependence on the written word; with a variety of presentation techniques; relate new ideas to their own circumstances, enable collaborative learning and apply what they had learned. Finally, materials should create a dialogue, rather than be didactic and must enable feedback from the learners.[xix]

The results from the Project in Radio Education and Adult Literacy (PREAL)[xx] and the evaluation of the Jhabua Development Communication Project (JDCP)[xxi] where there was little success underscore the importance of learner developed materials when contrasted with successful interventions such as Budikote, and COLLIT India project reported elsewhere in this presentation.

Relevant, appropriate, time and problem solving content is critical. This has to be developed either by the women themselves or in partnership with them; otherwise it will not be used, because it is not rooted in their ground realities.

3.4 What determines media choice?

Project managers in many ICT based efforts have yet to determine what the most appropriate medium to deliver knowledge is. Glitz surrounding the big media such as television has often blurred the reality of high start up, high operational costs with little or no visible results over time. What we do know is that as important as the choice of the primary or master medium is, equally important is the recognition that content delivered over the medium needs strong back up support in the field at the ground level.

There are many global experiences we can draw up to emphasize the importance of appropriate media choice. Looking at worldwide attempts to harness the technologies, one comes across a kaleidoscope of activities—from very large national efforts such as Mexico's *Telesecundaria*,[xxii] India's Satellite Instructional Television Experiment (SITE) and post SITE efforts.

Contexts that determined the need for large-scale broadcast initiatives (where scale can be defined in terms of the size of geographic and population groups to be covered or the complexity of operations) and the choice of technologies by different countries have been very much bound by national realities. Yet they follow a familiar pattern.

Mexico's need to fill the void created by a paucity of teachers in rural areas and the urgency to provide educational access and opportunity to students in far flung rural areas was the environment in which Mexico chose to use educational television in the *Telesecundaria* Project, while India needed to supplement and support its ground level efforts through the use of broadcasting to reach the unreached.

The countries followed and used the latest technology of the day, to transcend barriers of distance, poor infrastructure, lack of schools and colleges and illiteracy. Each made major investments in creating national and international technology grids enabling the development and delivery of content. Each made investments in content development and both made investments in ground support mechanisms such as extension and health workers in the field.

While all of them are running fairly successful, they have faced similar issues and challenges. The struggle has always been to reduce the rigidity imposed by a synchronous model with an in built rigidity because of radio and television scheduling, and to create a pedagogically sound balance between the visual power of televised images versus local relevance and regional needs and demands.
Similarly all have had to address the issues of centralized planning and deployment versus local relevance and regional needs and demands. All of them have had to face continuously daunting challenges of access, equity and interactivity and have been, to some extent, overtaken by technological developments emerging out of the digital revolution. Even with decreasing costs of technology, the upgradation and replacement of obsolete equipments has been a constant headache. As a consequence, all the large-scale efforts have been seeking to use digital technologies to enhance access and quality to their learners while promoting interactivity between learners, and between the learners and the teachers at lower costs.

Media choice has remained a very problematic issue and the tug of war between big media efforts (such as television at a national level) and small media such as community radio has continued. Developments in digital technologies (especially computer and Internet based) promising personalized learning at a localized and individual level have added a new dimension that has further complicated the issue.

However, it is noteworthy that there is a degree of "appropriateness" in the pattern of ICT usage in the developing countries that stands, as Farrell (2003)

reports "in contrast to that seen in North America and Western Europe where the tendency to adopt the "latest and greatest" of the newer technologies is rampant."[xxiii]

In the final analysis, choice of medium should be based on issues of reach and access, purpose and community to be reached, cultural acceptability and usability, local relevance, and "fitness for purpose". It should be a familiar and friendly medium, not requiring too many additional skills to master and must be backed up by follow through on the ground, best done by people from the beneficiary community itself.

3.5 How should ICT based projects be managed?

Undoubtedly, ICTs have influenced development discourse and policies in most countries. Countries that have formulated national IT policies have tended to provide support to their use for development. As a result, even though there may no legislation or clear cut policy for deploying ICTs for development, the commitment to support has often got translated into providing funding for them. However, an enabling policy does not automatically ensure that gender specific and sensitive initiatives would be specifically supported and funded. Unless, there is a firm and specific government commitment, even the allocated funds may not be released on time or other government department may not provide support. Further in the absence of gender segregated data, it is difficult to propose, promote and sustain gender specific initiatives.

Even the best-intentioned effort can fail, if project management is not given importance in any technology driven effort. At present, there is a dissonance between project management styles in vogue and the kind of management that ICT rich initiatives need.

Technology based interventions are inherently different from the conventional systems. Technologies are not merely hardware, but a set of management and operational practices. Technology based systems, by their very nature, must remain open, flexible, innovative and responsive to yield results. Policy, regulatory and management practices need to be revisited and revised so as to enable speedy response to address the special needs of ICT based systems.

In several countries of the Asian region, regulatory and pricing mechanisms control what technologies can be used, and what content is delivered over

these technologies. Policy frameworks also tend toward greater centralization and control over the technologies. Such regulatory practices run in direct conflict with the potential of the technologies.

Initiatives generally designed and implemented by conventional governments as part of a broad educational agenda, reflect the "conventionalism" of existing institutions; they combine hierarchical and bureaucratic systems of administration. Models of project management where projects or initiatives are implemented centrally fail to adequately take local needs into consideration. This results in a constant tussle between local requirements and the need to enable the development of local solutions.

While economies of scale make large projects and initiatives attractive, the solutions need to be location, problem, time, and people specific. The politics of monopoly and central control do not favour decentralization and provide the autonomy need to effectively implement locally.

Conversely, local solutions when up-scaled, even to meet regional needs, often fail. Sometimes, a project that worked in one part of the country will not succeed in another. Thus, when one looks for change at a micro level, it does not get adequately reflected on a national dimension—and similarly the transformations that are possible in small well organized local and problem specific situations are not possible when either the technology or the content is upscaled to meet the needs of a wider population.

For ICT use to be successful, patterns of management and administration have to be decentralized, innovative, flexible, and responsive. And since what works in one place may not work in another, the same initiative may not work in two different locations.

3.6 How are projects sustained?

Sustainability has two dimensions—funding and growth. As long as there is donor support and funding, planning for sustainability is rarely part of a project design. There is always an underlying assumption in government-funded projects that these projects will never be closed down, and that funding support will never cease. Further, the process of planning, deploying, and implementing ICT based initiatives is time consuming and a long term activity. It cannot be hurried, nor can such a process be time-bound. It requires investments of various kinds from national governments and implementing agencies- human, financial, technical and there is often a mismatch between timelines for projects and actual implementation in the

field. For instance, the COLLIT project had just begun to take off when donor funding was withdrawn.
The nature of ICT enabled projects and initiatives that they have both high start up and high operational costs; for content development, hardware and software obsolescence. And unless sustainability is built into the project design and a business plan worked out right at the beginning, there will be diminishing returns in terms of success. The present concern of donor agencies for visible returns on investment in terms of quantifiable data in order to ensure further funding is just not there—and no organization is willing to release information of this kind (as it jeopardizes future support).

Even where sustainability seems to built in through a plan, and efforts are made to continue the project after external funding support, quality and effectiveness suffers, as in the case of Internet Radio in Sri Lanka[xxiv] where the effort is struggling to maintain the same level of services when faced with a resource crunch. Similar problems of sustainability have been found in the COLLIT India Project in Rajasthan and Madhya Pradesh, India, one year after donor funding ceased.[xxv] In this project, a final comment made, made sadly by one of the project members stuck in my mind—she felt that in the execution of the project, all involved with the project had benefited, while the illiterate women who were the target were benefited the least.

A business or sustainability plan is a must for ICTs based interventions to succeed in the long run.

3.7 What research and evaluation is needed?

From information, we gain knowledge, and from knowledge, we deduce insights. For this, we need to create a body of knowledge, not just about what worked, but about what did not. This is one critical component of any project, generally missing from projects that seek to deploy information and communication technologies for development.

It has been my experience that we are notoriously lax in recording and publishing the lessons learned. Most of what is publicly available about projects, case studies, and best practices are glossy descriptions of how wonderful and how successful the projects were. If they were indeed so successful, why have we failed to achieve our goals?

It is only by building up a body of information that others engaged in research learn from peer experience and save valuable time and effort. I am

not referring merely to the final copy of the research report, which most often will be filed away, but a documentation, in diary form, of efforts at defining concepts, identifying problems and stumbling blocks, describing successful and failed solutions and critical self analysis.

There should also be a record of different kinds of research activities carried out. For instance, management criteria for proposals, contracts, study plans, documentation, mapping, budgets and cost accounting, logistics, project decision points, sampling plans, staff training and evaluation, field control methods, material preparation and pre testing, data processing and management, project monitoring and report preparation—all form important historical documentation that could describe success or identify causes of failure. And these are areas where we have very little information.

Evaluation should be part of project design, and should feed into the intervention for timely mid course corrections. Documentation of the processes is as important as the final evaluation, if we are to understand the ICTs better.

4. Some core principles of good practice

In the earlier section, we have raised and addressed a variety of questions we consider important in the interplay between ICTs and development, especially within the context of marginalized communities in developing countries. From the foregoing discussion, we would like to identify some core principles of good practice which we consider important

4.1 Small is beautiful

Without adequate and on going ground support, large ICT based experiments such as television have failed to yield expected results. Their very 'bigness' mitigates against tangible results and big interventions have serious problems of management, implementation and quick response, especially as they are often designed and developed in a top down conventional style. For results to emerge, ICTs interventions have to be small and locally relevant and responsive. For this, one can look at the Pondicherry Infovillage effort[xxvi] and the community radio efforts in Nepal, Sri Lanka[xxvii] and the Philippines.[xxviii] One might argue that it is difficult to upscale such initiatives—but all of these interventions are pointing to the importance of being small, flexible and locally responsive.

4.2 Situate ICTs in congenial environments-physical and social

There is enough research evidence to show that gender friendly and gender sensitive environment are preconditions for use by women. Physically congenial environments and timings are essential for women who have multiple roles to play in society. If the woman cannot come to the medium, the medium must reach out to her wherever she is and whenever she wants and can find the time for it. Socially acceptable environments are equally important, especially in cultures where the use of public spaces by women is frowned upon.

4.3 Place /transferring ownership and control in the community

Again, all success stories emerge when there is community involvement, ownership and participation in the process of decision making, whether in the management and use of technology or in the creation of relevant materials. There is enough evidence from research and existing interventions to establish that ownership and control is a critical element of good practice.

4.4 Involve community in content development

The user is often the best judge of individual and community needs. Adult learners need to share in the process of content development and very often, are the best resource for relevant content

4.5 Basing media selection on fitness to purpose

The availability of technology is NOT what determines its use. Appropriateness is based on the simple principle of "fitness to purpose" and is determined by patterns of access and availability, not merely reach, or on what is available

4.6 Incorporate flexibility and responsiveness in management

The very nature of technology is that it is unconventional. Therefore conventional methods of management will not work. It is necessary to incorporate a flexible, decentralized, and responsive mode of management

4.7 Build sustainability as in a business model right at the beginning

The question of what happens when donor funding stops should be answered upfront and sustainability built in as part of design itself.

4.8 Incorporate evaluation as an integral part of project design

Evaluation should be part of project design, should be ongoing and should feed into the intervention for timely mid course corrections. Documentation of the processes is as important as the final evaluation, if we are to understand the ICTs better.

Conclusion

While these principles have emerged globally as those that take ICTs a step closer to the goals of community development, the fact remains that "success stories" in ICT for development have essentially been in a project mode. Issues of replicability, scalability, and sustainability are extremely complex especially in developing countries and that too while addressing marginalized and socially disadvantaged groups like women.

We have consciously avoided use of term "best practices", which appears to favour one way of doing things to the exclusion of others and we recognize that good practice is both a dynamic and relative concept. Problems of infrastructure, scanty resources and other known barriers will not disappear in a hurry. What these principles of good practices can do is to provide a framework in which the critical points of attention do not get by-passed or over shadowed by short-time project goals.

[i] Sen, Amartya (1999). *Development as Freedom.* New York: Alfred A Knopf

[ii]iiSee http://www.dfid.gov.uk/mdg/default.asp

[iii] Lerner, Daniel (1958) *The Passing of Traditional Society. Modernizing the Middle East.* New York: The Free Press

[iv] Rogers, Everett M and F. Floyd Shoemaker (1971) *Diffusion of Innovations; A Cross Cultural Approach.* New York; The Free Press

[v] Wilbur Schramm (1964) *Mass Media and National Development.* Paris: UNESCO

[vi] Jose Calderoni (1998) "Telesecundaria: Using TV to Bring Education to Rural Mexico" *Education and Technology Notes Series, Vol 3 No. 2 p. 1-10 (*wbln0018.worldbank.org/.../ 1635F1703FE053B385256754006D8C3F/$FILE/telesecundaria.pdf (retrieved, 03 January 2005)

[vii] www.iadb.org/sds/doc/Edu&Tech13.pdf

[viii] See www.idrc.ca for the Acacia Project initiatives in Africa . See also Walker, David, and Latchem, Colin ((2001) *Perspectives on Distance Education: Telecentres: Case studies and key issues (Management* Operations * Applications* Evaluation)* Vancouver: The Commonwealth of Learning

[ix] Tichenor, P.J, G.A. Donahue, and C.N. Olien (1970) "Mass Media Flow and the Differential Growth of Knowledge" *Public Opinion Quarterly*, Vol 34, 1970; pp. 159-70 and Shingi, Prakash M, Gurinder Kaur and Ravi P. Rai (1982) *Television and the Knowledge Gap Hypothesis.* Ahmedabad: Indian Institute of Management.

[x] Hamelink, Cees (1983) *Cultural Autonomy in Global Communications*. New York: Longmans

[xi] Agrawal, Binod C (1986) *Culture, Communication, and Knowledge: The Structural Predicaments.* Ahmedabad: Development and Educational Communications Unit, Indian Space Research Organization (unpublished mimeo)

[xii] See http://www.telecommons.com/villagephone/gbfamily/html for a detailed description

[xiii] See http://www.col.org/forum/PCFpapers/haquer.pdf for details

[xiv]Subhadra Belbase (1988) "Development Communication, A Nepali Experience" in *Rethinking Development Communication*" edited by Neville Jayaweera and Sarath Anumugama, Singapore: AMIC, p. 208-226

[xv]See www.ddsindia.com/activities.htm

[xvi] Personal visit and evaluation reports of the project also reported in http://www.col.org/Consultancies/04Literacy.htm

[xvii] See http://www.vub.ac.be/apps/board/koccc/messages/181.html

[xviii] Don Slater and Jo Tacchi. 2004 *RESEARCH: ICT Innovations for Poverty Reduction* New Delhi: UNESCO. Pp 91 www.unesco.org/webworld

[xix] Warr, D (1992). *Distance Teaching in the Village*. Cambridge: International Extension College

[xx] Anita Dighe and Usha Reddi "Use of Communication Technologies in Open Learning, Non Formal, Adult and Community Education" Plenary Paper presented at the Pan Commonwealth Forum on Open Learning, Brunei 1-5 March 1999 See http://www.col.org/forum/dighe/htm

[xxi] Ibid

[xxii] Jose Calderoni (1998) "Telesecundaria: Using TV to Bring Education to Rural Mexico" *Education and Technology Notes Series, Vol 3 No. 2 p. 1-10 (*wbln0018.worldbank.org/.../ 1635F1703FE053B385256754006D8C3F/$FILE/telesecundaria.pdf (retrieved, 03 January 2005); and Glen Farrell (2003) "An Overview of Developments and Trends in the Application of Information and Communication Technologies in Education" in Glen Farrell and Cedric Wachholz (2003) *Meta-survey on the Use of Technologies in Education in Asia and the Pacific. UNESCO, Bangkok p.13*

[xxiii] Glen Farrell and Wachholz, op. cit p. 267

[xxiv] www.unesco.org/webworld/highlights/ **internet_radio**_130599.html

[xxv] Personal visit to project locations by author when evaluating the project one year after external funding support was withdrawn. Implementing agencies were struggling to maintain services, and in some instances

[xxvi] See www.apdip.net/**project**s/2003/in/Indiastudy.pdf

[xxvii] Usha Reddi and Vineeta Sinha (2003) "Country studies on Nepal and Sri Lanka in Glen Farrell and Wachholz op. cit. p. 258 and 263

[xxviii] http://www.i4donline.net/aug04/tambuli.asp