Information and Communication Technologies and large-scale poverty reduction

Lessons from Asia, Africa, Latin America and the Caribbean

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SDC/Panos (2005): *Information and Communication Technologies and large-scale poverty reduction: lessons from Asia, Africa, Latin America and the Caribbean.*

Edited by Kitty Warnock and Ravi Wickremasinghe, in cooperation with Gerolf Weigel.

Published by Panos London.

Foreword

The Information Revolution that the world is currently in the midst of, offers us immense hope, not only for halving poverty as outlined in the Millennium Development Goals, but also for creating more equitable patterns of economic growth, especially through a greater focus on the rural economies.

A number of experiments since early 1990s have demonstrated the potential role of information and communication technologies (ICTs) in poverty alleviation, social empowerment and human development. Further, there is now a greater understanding about the role of ICTs in promoting the principles of social inclusion, gender equity, remedying regional imbalances and reaching the 'unreached'. I am glad to note that a series of panel discussions and meetings are being organised by partners of the **Global Knowledge Partnership (GKP)** to deliberate upon the contributions that ICTs can make in combating poverty at the World Summit on the Information Society this week.

Among the many lessons shared, ***Every Village a Knowledge Centre*** movement, an initiative of the National Alliance on Mission 2007 is one of the finest examples of how small and isolated experiments can be upscaled at a national level. Mahatma Gandhiji once said *Gram Swaraj* (village freedom) is the pathway to *Poorna Swaraj* (complete freedom). Gandhiji's dream can be realised only through **knowledge empowerment** of the masses, including the poor and marginalised so that they become true stakeholders in the creation of a more equitable and just world. This is possible only through a synergy among all on-going development activities and by creating a critical mass of inter-institutional efforts and learning. I wish the panel events under the GKP Forum a great success.

M S Swaminathan
Chairman
M S Swaminathan Research Foundation
Chennai

The authors would like to acknowledge
the contributions made by participants
in the Chennai workshop, November 2004,
the Geneva workshop September 2005
and the La Paz workshop, 2005.

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A man using his mobile telephone amidst the destruction caused by the earthquake which struck Pakistani-administered Kashmir on 08/10/2005. Despite the carnage, the mobile phone network was up and running relatively quickly. At least 40,000 people were killed by the 7.6 magnitude earthquake. Balakot, Kashmir, Pakistan
CHRIS STOWERS | PANOS PICTURES

Introduction

Gerolf Weigel
Swiss Agency for Development and Cooperation

The 2005 Millennium Summit in New York, September 2005, showed that the Millennium Development Goals cannot be achieved in all regions at the present pace and intensity of progress.[1] There are many reasons, but one is that the potential contribution of Information and Communication Technologies (ICT) in increasing efficiency, effectiveness and productivity has not been used sufficiently and systematically. The enabling role of ICT in fighting poverty, especially in national Poverty Reduction Strategies (PRS) development and implementation is manifold, especially through:

- increasing the efficiency of efforts, reaching more people
- increasing effectiveness in terms of process, ownership, participation, more interactive communication and better service delivery in education, health etc.
- improving productivity and income of micro, small and medium enterprises through better access to markets and information, ICT enhanced micro finance programmes etc.
- creating jobs and income through ICT as a sector – producing hardware, software and other components of the ICT infrastructure.

Hundreds of initiatives, projects and programmes around the globe are using ICT to help the up-scaling of poverty reduction efforts.[2] But changes in technology and approaches happen extremely rapidly and the topic is very complex. Therefore, it is difficult to condense common lessons from this range of activities. Responding to the high demand for learning from valuable experiences, a series of interactive panel discussions will be organised in special events at the World Summit on the Information Society (WSIS), Tunis, November 16–18, 2005.

This publication compiles state-of-the-art lessons on this topic. These lessons have been derived from various events and processes, such as:

- the follow up to the ICT4D Platform/Forum[3] and Building Digital Opportunities (BDO) Evaluation of ICTs and Poverty Reduction in Sub-Saharan Africa[4]
- a comprehensive analysis and review of recent publications on ICT for poverty reduction, combined with a ‘ground check’ with practitioners and policy makers at a workshop organised by SDC and the MS Swaminathan Research Foundation in Chennai, November 2004. From this workshop emerged a publication[5] and the ‘Chennai Statement’, which were also discussed at a special event in February 2005 at the PrepCom 2 of the WSIS in Geneva
- a workshop organised by the International Institute for Communication and Development and SDC in La Paz, Bolivia, August 2005. This was another important source of knowledge, linking recent experiences in Latin America and the Caribbean with those described in the ‘Chennai Statement’
- Mission 2007[6] in India, an ‘Alliance of the Concerned’ of over 150 entities from the private sector, civil society and government, with the ambitious goal of building 230,000 people-focussed knowledge centres for the over 600,000 villages in India by 2007. This unique up-scaling effort builds on many years of experience and grassroots learning in ICT4D in the Chennai-Pondicherry Area in South India.

Rwandan refugee boy with a mud mobile telephone, emulating the aid workers
CHRIS SATTLBERGER | PANOS PICTURES

Preparations for the panel discussions provided inspiration and ideas to further complement and deepen the experience from the events mentioned above. The proposed panel discussions include:

- Increasing Outreach and Sustainability of Microfinance through ICT Innovation (Foundation for Development Cooperation / Global Knowledge Partnership)
- Enhancing access and the development impact of ICT: policy challenges, options and innovation (Global Knowledge Partnership / United Nations Development Programme / Swiss Agency for Development and Cooperation)
- Back to basics: Are ICTs really useful in poverty reduction? Mission 2007 – an ambitious effort in up-scaling ICT for poverty reduction (MS Swaminathan Research Foundation / Global Knowledge Partnership)
- Local content – An Answer to Global Problems (Global Knowledge Partnership / Open Knowledge Network / OneWorld / International Development Research Centre)

The discussion papers collected here are intended to serve as background documents for the panels and to contribute to the global knowledge sharing and learning process. They should also increase impact, synergies and efficiency of the preparations for and follow up processes related to the panel events. The WSIS meeting is not only a great opportunity to bring ICT4D to the attention of the global development debate; it is also a unique opportunity to benefit from the critical number of participants in order to share knowledge and build partnerships.

Updated information about the panel events related to theme 'The contribution of ICT to fighting poverty on a large scale: A synthesis of experience from Asia, Africa, and Latin America and the Caribbean' will be available on www.globalknowledge.org under 'GKP Forum at WSIS Tunis 2005'

Overview

The contribution of ICT to fighting poverty on a large scale: an overview of experiences from Asia, Africa, and Latin America and the Caribbean

Stijn van der Krogt
International Institute for Communication and Development[7]

During the last decade, development partners around the globe have gained rich experience and knowledge about the application of ICT for poverty reduction and its value for reaching the Millennium Development Goals and the goals of Poverty Reduction Strategies. But scaling up the results of successful projects into programmes and policies that lead directly to poverty reduction on a country-wide scale is still a challenge. Lessons learned from experience so far can be summarised around the following themes:

1
Prioritising poverty reduction

2
Creating an enabling ICT policy environment

3
Appropriate technology choices

4
Local content development and the role of the media

5
Mobilisation of financial resources and the role of microcredit

Prioritising poverty reduction

To create a conducive environment for mainstreaming ICT into poverty reduction it is necessary to raise the interest and support of key political decision makers at national level and the international donor community for ICT for development initiatives:

- *Empowerment:* The key value of ICT is its ability to empower the poor by giving them a voice in decision making. This contributes to good governance, transparency and participation in democratic processes. ICT also creates socio-economic opportunities in sectors that are critical to poverty alleviation, such as agriculture, education, health, small and medium enterprises, and access to microcredit;
- *Cross-cutting instrument:* ICT must be seen as an integrated cross-cutting instrument to reach national development objectives outlined in Poverty Reduction Strategies and Sector-Wide Approaches in key development sectors. This requires an understanding on the part of policymakers of the central role of ICT in improving performance in the key development sectors that affect the lives of the poor;
- *Understanding the role of ICT:* ICT should be understood in the context of the information society and the democratisation of information, communication and knowledge, with emphasis on access and participation of the poor. This implies a broad understanding of the role of technology for poverty alleviation. It is important to systematise, monitor and evaluate field experiences, address research gaps, and generate a critical mass of empirical evidence.

Creating an enabling ICT environment

Experience has shown that up-scaling of ICT projects is much easier in countries which have put in place an enabling ICT environment and a national ICT strategy with an explicitly pro-poor focus:

- *A pro-poor focus* will ensure that low-income households, cultural minorities and peri-urban and rural areas are not excluded as the nation's ICT infrastructure evolves in response to market demand;
- *Long-term* national ICT strategies provide a degree of continuity and focus which is particularly valuable in countries in which political instability and frequent changes of government are a fact of life;
- *Starting from experiences:* In these strategies, the deepening, replication and up-scaling of successful experiences should take precedence over reinventing the wheel;
- *Multi-stakeholder processes* for policy formulation and implementation increase the chances of reaching more effective policies and programmes, firmly rooted in the needs of the poor and contributing to poverty alleviation goals. Participatory approaches require active awareness creation strategies, enabling social appropriation by beneficiaries as well as active and informed participation of policymakers and the private sector;
- *The regulatory framework* must be highly integrated and flexible, and it must be updated frequently to account for the emergence of new technologies and convergence trends – for instance to allow for fast-track licensing of new technologies and services;
- *Low-cost ICT applications:* Among practitioners working with the poor there is a clear call for strategies that favour development of *low-cost ICT applications*, particularly giving precedence to open source software in government technology infrastructure;
- *Strategic alliances* between the private sector, civil society and the government are required to enable creative and sustainable models and implementation strategies supporting ICT programmes.

Appropriate technology choices

Technologies are 'appropriate' when they are geared to the diverse economic, cultural and social realities and capacities of each of the target groups. In up-scaled programmes this is much more of a challenge than in individual projects, where there is room for experimentation and where the feedback loop is small. Analysis of experience from the different continents indicates that:

- *Convergence:* Effective combinations of traditional and modern ICT will strongly depend on the local context, and call for innovative and creative models;
- *Community models:* The search for sustainable and effective ICT models for communities cannot succeed without the active participation of the different stakeholders at the community level. In Asia positive experiences are found in multi-purpose community knowledge centres, whereas in Latin America and Africa shared connectivity models linked to sector organisations at community level are found to be more effective and sustainable;
- *Capacities:* In the search for new ICT models and technologies, it is essential to build the competences of the various stakeholder groups, allowing them to make informed decisions about the most appropriate and sustainable technologies.

A man making a telephone call at a phone booth run by Douglas Oduori (left). He is operating a handset which is modified to function as a GSM wireless phone. The area has only recently received cellular coverage, so telecoms companies including Celtel and Safaricom are fighting for a share of the new market. Funyula, Kenya
SVEN TORFINN | PANOS PICTURES

Local content and the role of the media

Another key consideration in up-scaling is the development of relevant content. This relates both to enabling people to access the means of communication, and to strengthening their capacities to develop their own materials and messages. Lessons shared in this topic are:

- *Contextualisation:* A great deal of relevant information is already available for dissemination, but needs to be adjusted to the cultural context, local languages and capacities of users, using different ways of presenting information, combining oral, written and visual presentation, facilitated by radio, television or multimedia;
- *Relevant information for the poor* that is not readily available needs to be developed – preferably locally, as this assists in the social appropriation and effective use of ICT by the poor. It is important to guarantee the quality of local content, for instance through validation by local stakeholders;
- *Capacity development:* The development of local content should be accompanied by building local capacities for content development and diffusion, assisting in creating an information culture in which the poor have a role both as receivers and as active providers of information and knowledge;
- *Knowledge sharing platforms,* based on local and national radio, television, print media or the web, are found valuable for the exchange of content among user groups;
- *The media* plays an important role in awareness raising and the diffusion of local content. This requires a favourable environment for community-level media. For instance, free and fast-track license systems for local and community radio can assist in the development of rural based media. ICT in itself provides an important tool to strengthen the traditional media sector with alternative channels such as the internet.

Mobilisation of financial resources and the role of microcredit

Effective up-scaling of ICT for poverty reduction requires further mobilisation of financial resources. In this area the following lessons have been learned:

- Maximum mobilisation of private investment in ICT is crucial. An enabling investment environment is key, along with a pro-poor regulatory framework. Scarce public resources have to be concentrated on those areas where markets fail or have to be built up. A more *balanced allocation* of financial resources over infrastructure, content/media development and capacity development is a basic principle that needs to be applied to all ICT investments;
- *Integration of ICT into budgets:* The smart integration of ICT as enablers as well as productivity gains through ICT should allow existing resources to be used more efficiently. In addition it can be important to promote and integrate focussed pro-poor investments in ICT in national budgets, linked to Poverty Reduction Strategy Plans and specific Sector Plans;
- *PPPs:* Innovative co-funding schemes and partnerships between the private sector, government and the international donor community are essential to provide ICT to the poor, particularly in rural areas. In countries where alternative funding models are present – universal access funds, licensing mechanisms funds, etc. – the main task is to ensure the effective use of these funds for pro-poor ICT investments;
- *Microcredit:* Funding in ICT at macro and sector level can be complemented with the funding of local ICT initiatives through microcredit schemes. ICT innovations in finance, such as credit cards for the poor and hand-held devices for credit information exchange, strongly facilitate this new strategic convergence between ICT and the microcredit sector.

This synthesis provides some key lessons learned around the obstacles and possible solutions to the up-scaling challenge. More detailed and specific lessons are presented in the following chapters. Most lessons apply across the board in Asia, Africa and Latin America and the Caribbean, with differences and emphasis stemming particularly from the different political context in each of the continents and countries.

Internet and satellite telecommunications bureau, next to fashion store, Ouagadougou, Burkina Faso

CRISPIN HUGHES | PANOS PICTURES

Chapter 1
Enhancing access and the development impact of ICT: policy challenges, options and innovation

Radhika Lal
United Nations Development Programme

Introduction

Information society goals – universal access, and development of capacities and relevant content to enable effective use of information technologies and communication tools to address social and economic concerns (including scaling up the response to achieve the Millennium Development Goals) – are on the development agendas of many countries.

Even as access has been rising dramatically, we still seem far from reaching these goals. Not only is access itself limited and more often than not, unaffordable, but awareness of the development role of ICT which could catalyse further investment and contribute to a more effective use of ICT, while increasing, is still work in progress in the broader development community. Capacity development has also tended to be underemphasised as has the importance of local content. Further, the regulatory environment and financing mechanisms in many countries have not been supportive of the deployment of more cost-effective technology options (e.g. internet-based telephony, wireless) or open to the scaling up of community based networks and other ICT for development initiatives and entrepreneurial efforts. In some instances, even when infrastructure developments that could bring the cost of ICT access down have been implemented, costs have remained extraordinarily high – on account of the financing models adopted, amongst other things.[8]

E-government/governance initiatives which can facilitate service delivery as well as potentially enable a greater interaction with citizens have been a growing area of focus in many countries. While such initiatives have produced results and benefits, in many cases they have either simply been electronic versions of dysfunctional processes or the ICT approach adopted has made it difficult for citizens to access the services provided or to provide inputs on the policies and initiatives proposed for implementation. Initiatives have also often been designed without taking into account the need to ensure equitable access and use by both men and women.

However, while the overall task of addressing these challenges and moving forward appears to be ambitious, a number of developments at the level of technology, organising strategies and possible openings in development, financing and ICT policies suggest that we have a new set of tools at hand with which to address the current set of challenges. Valuable lessons have also been learned over the past decade of ICT network development and application.

Infrastructure, Access & Effective use: challenges, emerging technology options and policy choices

Where communities and stakeholders have recognised the importance of ICT, its use has proceeded even in the context of relatively high costs for access. However, the high cost of access has posed challenges for the sustainability of many initiatives and limited the extent to which ICT could be used to access or exchange critical information or be deployed to facilitate service delivery, catalyse entrepreneurship or empower communities. This has led even those working on the mainstreaming and deployment of ICT to focus on infrastructure and access issues in the context of considering how best to up-scale innovative approaches and initiatives.[9]

The most visible area of focus has been mobile telephony. Many countries have seen a dynamic and rapid expansion in mobile telephony – including provision of services to hitherto underserved populations. This is viewed as being the result in large part of increased competition in developing country markets and the growing maturity of established markets. It also appears to have benefited from innovative business practices such as the use of pre-paid cards, the resale of airtime by small/informal sector operators (e.g. village or town phone ladies), services offered with and financed through drawing on microfinance (e.g. Grameen Village Phone) networks and financing. The third but not least important element has been a growing awareness of the communication needs of the poor and the willingness of poor people to pay for communication services.

In this context, mobile telephony has often been hailed as *the* solution.[10] However, while telephony remains the most commonly used ICT – often very innovatively in many contexts – it has not yet become widely accessible or affordable by the poor[11] nor, more importantly, has it negated the role for other ICTs (e.g. radio or internet). Further, 'broadband infrastructure' which through facilitating a convergence in the platform for facilitating telephony, exchange of data, broadcast, etc. can reduce costs of delivery of ICT and ICT-enabled services (e.g. for education, healthcare, etc.) permits a greater range of simultaneous exchanges and activities, including telephony (e.g. VOIP or telephony over the internet). These other ICTs are also important for facilitating more collective processes of empowerment, organisation and for catalysing investment and private sector activity.

Key Questions

- Is access to ICT important for development?
- What are the reasons for the continued high cost of access, often in spite of investment in infrastructure?
- Should infrastructure provision be left to the private sector or is there also a role for the public sector, community-driven infrastructure/provision and multi-stakeholder partnerships?
- Are current financing and regulatory mechanisms adequate or is there a need for a new ICTD policy paradigm and financing instruments and/or mechanisms?

Lessons Learned and Emerging Solutions

- 'Open access' approaches involving public investment and non-discriminatory access may be able to facilitate investment in network infrastructure and reduce costs of access to under-served communities.
- Open source and open content approaches may help to effectively address the cost and local content challenges.
- Community-based infrastructure options in combination with the new cost-effective technologies such as WiFi and WiMax may be applicable in many instances where no or limited market potential is seen.
- To ensure effective use of ICT by women and other typically disempowered groups, there needs to be an a priori focus on their needs and the consideration of how best to foster equitable access to ICT and capacity development opportunities and use of ICT.
- Horizontal multi-stakeholder alliances and partnerships are useful not only for sharing risk but also for coordinating activities and benefiting from reduced costs and enhanced synergies.

Collating test results, malaria research unit, Mozambique
ANDY JOHNSTONE | PANOS PICTURES

The potential of the new technologies and approaches has also raised questions about how best to address the current disparities in access and costs across regions. The cost for the same type of broadband access is $1000–8000 dollars/month in parts of Africa, and $100/month in a similar context in Central Europe, whereas it could soon cost local communities in Andhra Pradesh, India as little as $2.93/month as a result of the government's new broadband initiative. What are the factors limiting investment in infrastructure and what might be ways to address the emerging gaps in network development, particularly in areas where investment is not likely to be commercially viable? How can regulatory policies productively address the tradeoffs and challenges of 'creative destruction'?

The current telecommunications/ICT policy paradigm recognises the gaps in investment and the disparities in costs but basically puts its faith in telecommunication market reforms accompanied by the development of universal access funds and the award of least-cost subsidies to the private sector to provide service in areas that would otherwise remain under-served.[12] While the proposed reforms have indeed been unevenly implemented with predictable results, even where they have been 'adequately' implemented, there have been mixed results. Some regions have seen dynamic growth as a result of the reforms and award of subsidies for increasing access in under-served areas, but in other instances challenges have remained, particularly as far as addressing situations where investment is unlikely to be recovered on the basis of currently projected demand (e.g. East Africa cable) and which also require cross-country coordination and an element of public financing. For some, this has highlighted the role of 'open access' approaches and also raised the issue of whether a new ICTD policy paradigm is needed.[13]

Innovative approaches such as those being adopted by the state government of Andhra Pradesh in India point to other ways to bring down costs and expand network development. The latter involves a public-private partnership approach and public investment of just USD 6 million (total project cost USD 93 million) to provide 2 MBPS connectivity in every village of one of the largest states in India (22,000 villages over 275068 sq Kms) for a cost of $2.93/month. In this instance, the government set this price and invited bids, and a private consortium led by a sister concern of the largest fibre optic manufacturer in India won the bid. A critical mass in terms of demand was likely to be met with the government agreeing to purchase connectivity for close to 40,000 government offices, and for citizen service delivery centres in each village.[14] At the local level, a case is also being made for a greater role for community-driven infrastructure and multi-stakeholder approaches.[15]

Also important have been innovations at the level of coordination, which give new meaning to up-scaling by actions coordinated across a wide range of partners, addressing synergies and potentially reducing procurement and connectivity costs. See for example, the case of Mission 2007 in India.[16]

School children using computers at their primary school, Botswana.
GIACOMO PIROZZI | PANOS PICTURES

ICT for poverty reduction & the MDGs?

ICT for poverty reduction and the achievement of the MDGs is emerging as a major focus in WSIS and also for the activities of governments and development partners.[17]

Amongst other things, achieving the MDGs requires rising above current growth rates, a focus on ensuring that the gains are more equitably distributed and also substantially increasing investments in healthcare, education and physical infrastructure – particularly in poorer and under-served areas.[18]

In this context, work has been initiated to explore how to take the high-level focus on ICT for MDGs at WSIS to a stage of practical implementation by concretely identifying the specific roles that ICT can play in the context of enhancing economic growth opportunities as well as contributing more directly to achieving the MDGs.[19]

Lessons learned suggest that if ICT is to be useful for achieving the MDGs and serving the needs of the poor, it should be deployed not only in facilitating a scaling up of public and private services delivery, but also in enabling development communication, participation and empowerment of the poor. ICT should also be used as a catalyst to increase investment and provide support to enhance the viability of the occupations of the poor as well as of local enterprises more generally.[20]

The UN Millennium Project's *Investing in Development: A Practical Plan to Achieve the Millennium Development Goals* (2005) points out that "If every city has a reliable electricity grid, competitive telecommunications, access to transport, accessible and affordable housing for the poor, a water and sanitation system, and access to global markets through modern ports or roads, jobs and foreign investment will flow in – rather than educated workers flowing out. Investing in core infrastructure, human capital, and good governance thus accomplishes several things:

- It converts subsistence farming to market-oriented farming
- It establishes the basis for private sector-led diversified exports and economic growth
- It enables a country to join the global division of labour in a productive way
- It sets the stage for technological advance and eventually for an innovation-based economy."[21]

Key Questions

- What is the evidence that ICT is useful for poverty reduction and empowerment of the poor?
- Can ICT be used to deliver public and private services and utilise public resources more effectively?
- What does it mean to integrate ICT into poverty reduction strategies? What should be the key pillars or areas of focus?
- Has the 'mainstreaming' approach been effective or does there need to be a focus on ICT for development initiatives for a while longer until a critical mass is reached in terms of awareness and demonstration of impact?
- How should the development impact of ICT be measured?

Lessons Learned and Emerging Solutions

- Many e-governance initiatives fail to deliver on their promise because they have been implemented as electronic versions of existing dysfunctional processes.
- Increasing attention needs to be paid to the role of ICT in facilitating a more participatory approach to the formulation and implementation of development strategies and policy processes more generally.
- A major area of focus needs to be bridging the policy divide that often exists between the 'ICT for development community' and the rest of the development community. Work could begin by identifying critical development priorities and challenges and then exploring the role that ICT can play in addressing them.
- Addressing the demand aspects of ICT can assist in moving away from infrastructure driven approaches.

A Wapixana Indian woman using an old Singer sewing machine, the income from which enabled her family to afford a satellite dish and television set. The tribe live in a small reservation called Moskow, one of 160 territories protected by PP-G7, the Pilot Programme to Conserve the Brazilian Rainforest

GERD LUDWIG | PANOS PICTURES

There is also substantial evidence to suggest that poor communities pay substantially higher costs for access to information and finance and typically suffer from a deficit in access to services.[22] Accessing even standard forms or making complaints often involve a substantial amount of time and use of scarce resources. Even where information is available, this is not always in local languages or adapted to local needs and conditions. This suggests a role for different kinds of ICT – radio, information access/e-governance centres – and the involvement of local organisations and actors who are aware of local needs and can act to effectively bridge the various divides.

Globalisation and the restructuring of national economies currently underway have also had a major impact on livelihoods and opportunities for enterprises in developing countries – both positive and negative. To the extent that ICT can be used to enable firms in advanced capitalist countries to decentralise and outsource production and services globally, individuals and firms in developing countries can often benefit. To this extent, ICT becomes critical for how production, distribution, marketing and planning processes are organised. The ability of producers to avail themselves of these global opportunities as well as to withstand competition in their domestic markets[23] depends upon their innovativeness, capacity to learn and their effectiveness in using and absorbing technology. Even in the 'informal sector', the source of livelihoods for most of the world's poor and for a large percentage of women, ICT can assist with the delivery of social services and of micro-finance, and assist with coping strategies and income generation and contribute to sustainable development.

However, at the policy level there is a gap. The results of the OECD/DAC review of ICT in poverty reduction strategy papers (the PRSP is a major policy and financial instrument for many countries, particularly in Africa and Asia, and inclusion in the PRSP is critical for ensuring that ICT is recognised as a development priority for funding) suggest that while ICT is often mentioned as a priority, it is not comprehensively integrated into the poverty reduction priorities and programmes.[24] In cases where there is a recognition of the role of ICT to increase development effectiveness, up-scaling strategies often move to completely different modalities of implementation. They often neglect to incorporate the creativity, local connections and community structures of support and participation that the bottom-up approaches and community-based initiatives bring. Success has often been the result of combining a mixture of more standard and localised content, and of partnerships and inclusion of key stakeholders. Without such integration and participatory approaches to implementation,[25] there will likely be little impetus to move away from 'development as usual' to ensure that ICT is deployed to meet the needs of the poor and to contribute to achieving the goal of poverty reduction.

Chapter 2
ICT for development in Latin America and the Caribbean: scaling up projects to national level

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Introduction

The Swiss Agency for Development and Cooperation (SDC) and the International Institute for Communication and Development (IICD) support ICT projects in Latin America and the Caribbean. Many of their partner organisations, from civil society, the private sector and governments, apply ICT to enhance development programmes. The SDC and IICD have also been involved in the World Summit on the Information Society, which is promoting ICT for development.

Development partners of SDC and IICD in Latin America and the Caribbean have rich experience and knowledge about the application of ICT for poverty alleviation at project level, where ICT is used to support key areas of development: agriculture, micro credit, education, health, governance and democracy. Many of these projects have demonstrated the value to people with low incomes, especially in rural areas, of access to information and communication, and of participation in the development of local content.[26] The evaluation of these projects has demonstrated the significant impact of ICT in poverty alleviation, through empowering poor communities and promoting economic development.

The majority of ICT projects in the region work at local or provincial level. However, agencies meet a number of obstacles in **scaling up local projects into programmes with national coverage** and in **integrating ICT into national poverty alleviation policies**.

These obstacles – and possible solutions to them – were discussed by a group of 40 experts from Bolivia, Chile, Colombia, Costa Rica, Ecuador, Nicaragua, Peru and Venezuela at a workshop organised by SDC and IICD in August 2005.

The main purposes of the workshop were: to share experiences about the integration of ICT in poverty alleviation programmes and policies; to capitalise on the growing interest in this theme among different stakeholder groups, particularly the governments in the region; and to find ways to increase the participation of the international donor community. Participants analysed the key factors that lead to local ICT experiences being recognised by leading national decision-makers as key references in formulating and implementing national ICT programmes. It is vital that the experiences of projects at local level are recognised as a starting point for the integration of ICT into poverty reduction strategies at sector level (SWAPs) and at national level (PRSPs).

Up-scaling ICT for the future generation, Ayni, Bolivia.

Workshop participants also discussed the need to recognise information and communication as a democratic right. They emphasised the role for social interaction in providing and receiving information and content, and thereby generating knowledge. Participants saw ICT as a key instrument to strengthen democratic processes in the region.

This chapter summarises the findings of the workshop. At the end of the chapter, findings from the workshop are compared with findings of a similar exercise in Asia and Africa.[27]

Linking ICT to poverty alleviation

In order to scale up ICT for poverty alleviation, it is first necessary to clarify the link between ICT and social, cultural and economic development. Once this relationship has been established, it is possible to gain the interest of both end-users and decision-makers in supporting and using ICT as a tool to reach broader development objectives.

The universal right to information and communication

First, it is necessary to establish the **universal right of citizens to information and communication** and the need for the **democratisation of information and communication**. Societies should look to develop an 'infoculture', in which citizens actively participate and benefit from information, communication and knowledge.

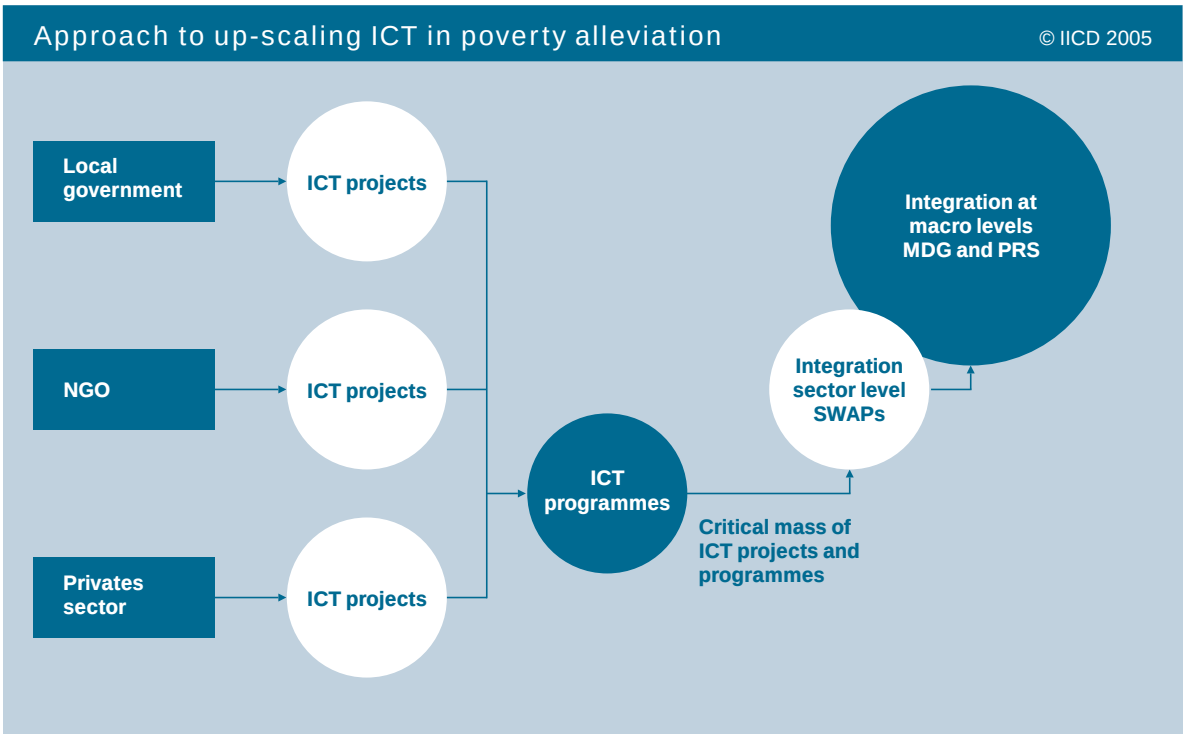
The challenge at a macro level is to provide access to information and communication for marginalised groups, particularly in peri-urban and rural areas. Different kinds of technologies are a means to achieve the objective of universal access to information and communication. 'Access' here refers both to receiving information and to the development of relevant content by citizens.

In many countries in Latin America governments place only limited value on citizens' contributions. **ICT initiatives linked to governance and democracy** therefore have an important role to play. Project-based evidence shows that ICT can support governance and democracy by empowering citizens.

A second principle is the importance of **ICT in strengthening socio-economic opportunities**. The lack of participation in economic development by poor communities in Latin America is partly due to lack of access to basic education; failure to build productive capacities; and the lack of access to markets. ICT projects contribute directly to **socio-economic opportunities** through promoting education and enhancing the productive and economic capacity of people in agriculture, small and medium enterprises and microcredit.[28]

Integrating ICT in national poverty alleviation strategies

To scale up ICT for poverty alleviation, it is essential to integrate ICT in national poverty alleviation strategies and sector-based strategies. The following chart represents how ICT projects can be integrated into sector-based strategies (e.g. sector-wide approaches) and national policies (e.g. national development strategies and plans, and poverty reduction strategies).



A key requirement here is the need to create **awareness-raising and advocacy strategies** towards local and national governments. In addition, experiences and lessons learned from ICT for development projects need to be considered. It is also essential to establish **strategic alliances** between government, the private sector and civil society in order to embed ICT in poverty alleviation programmes and policies.

To gain political acceptance of the value of ICT, it is essential to propose and demonstrate **sustainable ICT applications** and solutions. All ICT initiatives should also include **mechanisms to measure and monitor the impact of ICT on poverty reduction**.

Taking account of cross-cutting issues and the international context

To integrate ICT in poverty alleviation programmes and policies, a variety of cross-cutting issues need to be taken into account. These issues include socio-cultural diversity among poor communities, gender, human rights and the environment.

In the Latin-American context, the **multi-cultural aspects of indigenous and ethnic groups** need to be considered. The specific needs of different target groups need to be understood and acknowledged in order to enable them to participate in formulating and implementing ICT programmes and policies. It is important to recognise the need to develop local content; standardisation of content is only possible to a limited extent.

Considering the indigenous people, MCCH Ecuador.

The integration of ICT in poverty alleviation strategies takes place within a wider **international context**. Workshop participants recognised the need for additional analysis of and research into this broader context.[29] However, it is outside the sphere of this chapter.

Key issues in scaling up ICT for poverty alleviation

In the Latin American region the use of ICT in poverty alleviation is generally developing from scaling up of local projects, undertaken by grass-roots organisations, NGOs and local governments, into provincial and national programmes. These initiatives are often supported by the international donor community. National governments only tend to take on shared responsibility for integrating ICT into national poverty alleviation programmes once these initiatives are shown to be successful and sufficient lobbying has taken place.

A number of issues need to be taken into account in scaling up ICT for poverty alleviation. Work in the following areas needs to be developed in **parallel**:

- Systematisation and diffusion of ICT project experiences and lessons learned
- Local content development
- Capacity development of stakeholders
- Strategic alliances between government, private sector and civil society actors
- Reaping benefits from the technological convergence in ICT
- Participatory formulation and implementation of national ICT strategies.

Systematisation and diffusion of ICT experiences

It is vital that large-scale ICT programmes or strategies take stock of and analyse the lessons learned, both positive and negative, from local ICT projects and initiatives. This requires a joint effort by civil society and academia, which often operate on an individual basis rather than working collectively to find best and worst practices. Government bodies responsible for ICT have a key role here in looking at on-going local ICT projects. This requires consultations and field visits to gain first-hand information and experience on the ground.

There are a number of practical examples of projects working successfully on issues of governance and democracy. In Colombia, COLNODO (Red Colombiana de Comunicación) used ICT to promote government accountability. In Bolivia, ENLARED (a project of Municipal Associations of Bolivia) has used ICT to promote local government; *Ondas Libres* has used ICT for public political debate; CIDBOB (Confederacion de Pueblos Indígenas de Bolivia) has used ICT to promote access to land rights.

In the field of education, successful programmes supporting teaching and learning processes have been implemented by the Omar Dengo Foundation and the Government of Costa Rica, and by the Ayni Foundation and the local government of Oruro in Bolivia.

In agriculture, a programme in Peru by CEPES (Centro Peruano de Estudios Sociales) supports information systems for irrigation. In Bolivia, ICT is being applied by AGRECOL ANDES to strengthen the exchange of best practices among farmers, and by Instituto de Capacitación del Oriente (ICO), Fundacion Accion Loyala (ACLO) and the government of Bolivia to support agriculture price information systems.

Interesting programmes at national and regional level include the National ICT Strategy of the Government of Bolivia and the network of community radios initiative by the Asociacion Mundial de Radios Comunitarios (AMARC).

Where no local experiences are available, experiences from other countries can be useful. However, experiences within a particular country are particularly valuable, as these are embedded in the local social and cultural context and respond to local needs. Whereas some experiences only apply to the local context, in many cases local experiences can be **deepened or replicated** to the larger national scale. In these cases, translations of local content into other languages can facilitate access to a larger target group.

National information exchange networks of organisations with experience in ICT have been shown to be an effective mechanism to stimulate exchange between the different practitioners and decisionmakers (including government, the private sector, civil society and academic institutions) and diffusion of experiences to a wider public.[30] These networks are supported by various tools such as websites, electronic and printed newsletters, databases, awareness-raising events and mass media involvement.

Developing local content

Access to information and communication, while important, is not in itself sufficient to bring about the effective use of ICT for poverty alleviation. The analysis of ICT project experiences that forms the basis of this chapter indicates that it is vital that **local content is developed, based on the needs and socio-cultural particularities of each target group**. Local content here refers to content that supports relevant information and knowledge on issues like governance and democracy, education, health, agriculture, small and medium enterprise, and microcredit.

Direct participation of the target groups in developing local content is also necessary to ensure local ownership and effective use of the content. At the same time, it is important to build local capacity in ICT.

One of the main challenges in scaling up ICT projects is ensuring that these principles are applied to ICT programmes at national level. Experiences in the region indicate that national governments, when formulating and implementing ICT for poverty alleviation, tend to focus on the introduction of technology and infrastructure. Where content provision is incorporated, standardised content tends to be introduced, often acquired from the private sector or imported from other countries. There is a tendency to ignore or undervalue local content. As a result, valuable local content developed by target groups, and often supported by local governments, grassroots organisations and NGOs, is not used on a wider scale.

Scaling up ICT for effective poverty reduction therefore requires **mechanisms to ensure the quality of content**. These need to be based on **evaluation criteria shared with local government and civil society actors**. Although standardisation of content is important at national level, allowance needs to be made for the use of content at the local level that is validated only by local actors.

Raising awareness and building capacity

The previous section mentions the need for building 'soft capacities' to develop, validate and use local content. Investment is also needed to build **technical ICT-related capacities** to combine traditional and modern information and communication technologies. End-users, civil society, private sector operators, and local and national government all need to be included in awareness and capacity development programmes.

A related issue here concerns the capacities of citizens, grassroots organisations and NGOs to influence public ICT policies and strategies. Knowledge, skills and experience in **awareness-raising and advocacy** promote effective participation in the public sphere. Capacities need to be developed among civil society networks, the academic world and those decisionmakers involved in poverty alleviation programmes and policies.

Participation in formulating and implementing national ICT strategies

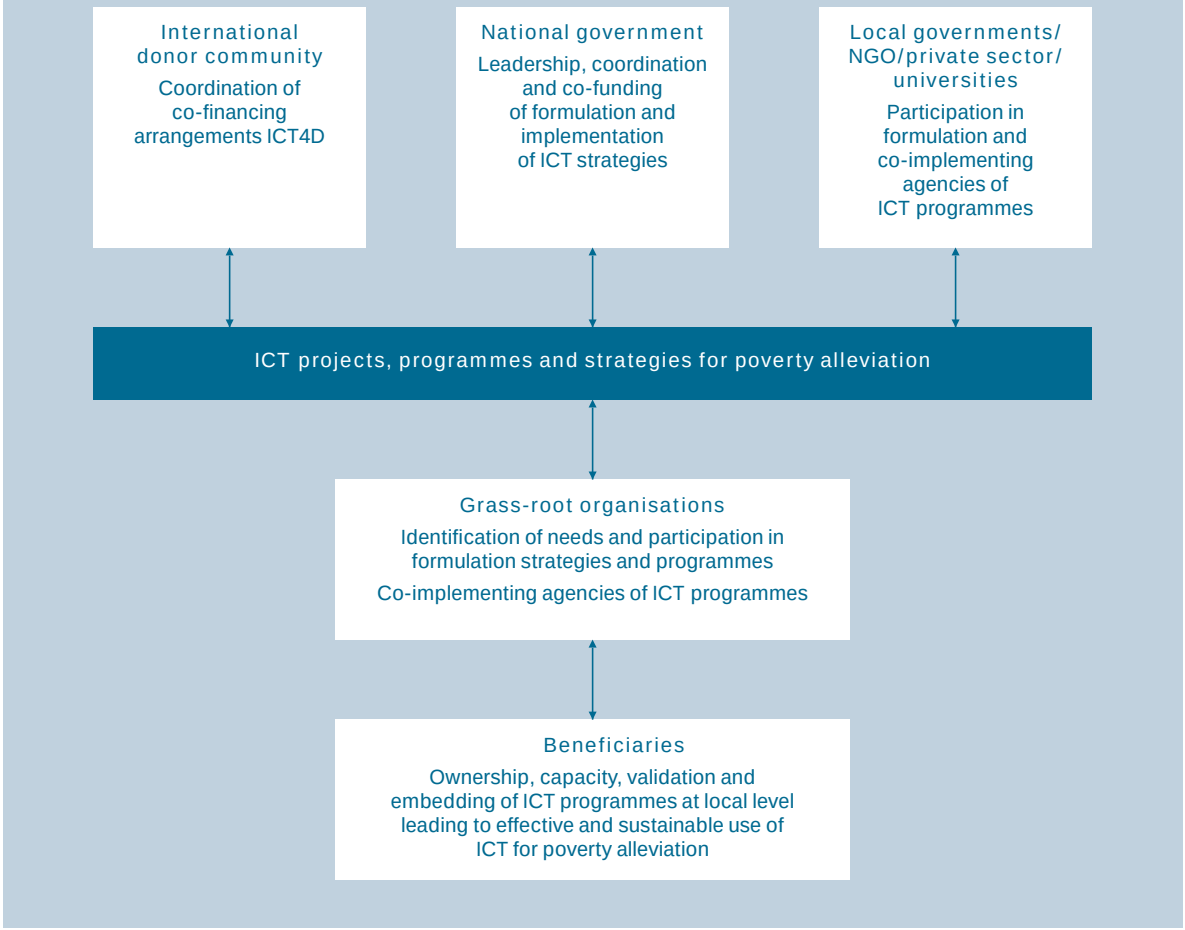
In order to scale up the role of ICT in poverty reduction, it is vital to develop national ICT strategies. This is of particular relevance in the Latin American region, which is characterised by a highly unstable political environment, with regular changes in governments. A long-term national ICT strategy can provide the **necessary continuity in the overall strategic direction and implementation of programmes**.

A national ICT strategy needs to take the government's **poverty alleviation policy and strategy** as the key reference point, so that it explicitly addresses its contribution to poverty alleviation. However, in many cases, ICT strategies focus instead on ICT infrastructure and are developed in isolation from overall national development plans. This limits the interest and support of key national policy makers and, often, the international donor community.

The integration of the ICT strategy into national poverty reduction plans needs to take account of the **needs and values** of the different stakeholder groups that are participating in formulating the ICT strategy. The strategy should be clear about how it will address urban-rural differences in ICT access. It also needs to take account of links between the different sectors. In this way the strategy can provide both continuity and integration of existing and future ICT projects and programmes.

A participatory approach to formulating and implementing ICT programmes and strategies is a basic pre-requisite for the effective application of ICT to poverty alleviation. **Responsibility should be seen as shared between civil society, the private sector and government**.

Roles of the stakeholders in ICT4D policies and programmes



Frequently the government, private sector or civil society considers responsibility to lie with one of the other stakeholders. In other cases, stakeholder groups assume exclusive ownership and decision-making powers, excluding other stakeholders from the process. A joint effort is necessary, distinguishing the role of each of these stakeholders in the process of formulating, implementing and monitoring the results and impact of the programme on poverty alleviation. The chart above presents what the respective roles of each of the stakeholder groups should be.

The national government has the leading role in policy and strategy development, and is responsible for the coordination and co-funding of ICT programmes in relation to poverty reduction objectives. The strategy formulation process needs to start from an analysis of ICT experiences at project and sector level. NGOs and academia also have a responsibility to participate in this, drawing on their practical experiences.

The private sector, as a provider and operator of basic ICT infrastructure and services, is a key player in scaling up ICT for poverty alleviation. In many countries, small- and medium-sized ICT-providers show more interest than large-scale providers in investing in services in areas with limited profitability. This group of private sector operators can establish strategic partnerships with government and civil society to explore new forms of development-oriented (but sustainable) solutions for marginalised users.

Grassroots organisations and local governments have to play a key role in identifying local needs and potential uses of ICT for poverty alleviation. These stakeholders can together develop strategies for awareness-raising and advocacy in order to assist local government agencies to gain support from leading decisionmakers in government.

Beneficiaries have an essential role in the formulation and implementation of ICT policy, as it is they who ultimately have to take on the capacities and ownership of ICT programmes and are responsible for their longer-term validation and sustainability.

Technological convergence

ICT is defined as the array of instruments and processes to access, collect, store, organise, manage, produce and exchange information with the help of any manual, electronic or digital technology. Traditional ICT includes the mass media, community radio, hand-held rural radio systems, television and fixed telephony. Modern ICT includes the internet, the worldwide web, computers, mobile and satellite telephony, multi-media applications, databases and electronic libraries.

Different combinations of traditional and modern ICT are required, depending on the situation of the different user groups and areas of intervention, such as rural-urban, literate-illiterate users, indigenous users, gender, agriculture, education, health, and governance. A key consideration here is also to explore the use of open software as a means to democratise software application development. It is also important to complement ICT with the provision of related basic services, such as electricity and transport systems.

Satellite-based internet connectivity connects rural communities in Lomerio, APCOB Bolivia.

Lessons learned and recommendations

The following conclusions and recommendations are based on the analysis of scaling up ICT for poverty alleviation in Latin America and the Caribbean described in this chapter and the experiences in Asia and Africa presented in the Chennai Declaration 2005 (see next section).

Universal access to information and communication: ICT is an instrument to access information and communication. This in turn promotes empowerment and economic opportunities.

Clear roles of stakeholders: It is essential to establish clear and distinct roles for the different stakeholders in the use of ICT for poverty reduction.

- National governments should focus on: co-ordinating strategy formulation and implementation; promoting equal participation of the different stakeholders; establishing a clear regulatory framework to promote ICT access by underprivileged groups; and co-funding of those ICT programmes that explicitly target marginalised user groups. National governments have only limited responsibility for the actual implementation of ICT programmes.
- Grassroots organisations and local government have a key role to play in identifying needs.
- The international donor community has an important role in coordinating the co-funding of ICT programmes.
- The NGO and academic sectors are co-implementing agencies. They also play a primary role in the systematisation and diffusion of experiences, and in monitoring impact and sustainability.

ICT awareness and advocacy: Civil society should pay attention to awareness-raising and advocacy processes in order to achieve greater integration of ICT in national poverty reduction policies and strategies.

Participative ICT strategy development: Participatory structures must be developed that enable civil society, the private sector, academia and the government to take part on an equal basis in formulating and implementing ICT strategies and programmes for poverty alleviation.

Capacity development: Capacity development is needed to promote ‘soft’ and ‘hard’ capacities in the use of information, communication and technologies. It is also necessary to strengthen the capacities of civil society and local government networks to enable them to advocate effectively for ICT that addresses poverty reduction.

Local content: The importance of developing local content and building capacities of local stakeholders to develop local content cannot be over emphasised, particularly involving content that is relevant to indigenous people.

Headman of the Dayak tribe being trained to use a Global Positioning Satellite system to help in community mapping, Kalimantan, Indonesia.
CHRIS STOWERS | PANOS PICTURES

Chapter 3
Up-scaling pro-poor ICT policies and practices: the Chennai Statement and lessons learned

SDC/MSSRF
edited by **Richard Gerster** and **Sonja Zimmermann**

The Chennai Statement

Introduction

1
Upon invitation of the MS Swaminathan Research Foundation (MSSRF) and the Swiss Agency for Development and Cooperation (SDC), development practitioners and policy makers met in Chennai, India, from 17–19 November 2004, for a **workshop** to review experiences in Asia and Africa in the use of information and communication technologies (ICTs) for poverty reduction. The event was organised in coordination with and supported by the Global Knowledge Partnership (GKP), OneWorld South Asia and the United Nations Development Programme (UNDP). In order to provide a more compact input into the processes of the World Summit of the Information Society (WSIS), Poverty Reduction Strategies and the Millennium+5 Summit, the participants decided to compile some key conclusions and recommendations in a statement. The purpose of the resulting 'Chennai Statement' is to stimulate debate about ICT from a clearly poverty-focused perspective.

2
The **Chennai Statement** reflects the shared concerns of the workshop participants from ten countries mainly in Asia and a number from Africa, Australia, North America and Europe. Among the participants were representatives from multilateral organisations, bilateral development agencies, civil society organisations and the private sector. The Chennai Statement is intended to serve as an input into the on-going global debate on the role of ICTs for development, particularly in view of the poverty reduction oriented agenda for the implementation of the WSIS Principles and Action Plan in the context of the Millennium Development Goals (MDGs).

3
The participants share the declared **WSIS vision** of a people-centred, inclusive and development-oriented Information Society, where everyone can create, access, utilise and share information and knowledge, enabling individuals, communities and peoples to achieve their full potential in promoting their sustainable development and improving their quality of life; the main challenge is now to implement the WSIS's Declaration of Principles and the Plan of Action. The need to translate the people-centred vision of ICTs for poverty reduction into action is intrinsically linked to the challenge of reaching the MDGs.

4
ICTs can **make a difference** in poverty reduction. The practical experience as well as the lessons learned around the globe demonstrate the great potential of ICTs to support poverty reduction efforts by enhancing empowerment, opportunity and security. This potential contrasts, however, with the overall modest impact of ICTs on the MDGs, remaining well behind expectations.

5
In view of the massive up-scaling and replication of the use of ICTs for poverty reduction that is needed, the participants of the Chennai workshop on 'Up-scaling Poverty Reduction through ICTs' hereby **endorse** the design, adoption, and implementation of ICT policies and practices at all levels. ICTs are a tool and should be understood in a broader perspective that includes the following elements:

Relevance

6
Building on the lessons learned, untapped opportunities exist for **scaling up poverty reduction using ICTs**, by harnessing their potential for dynamic knowledge sharing and networking, building on economies of scale and drawing on a broad range of approaches that can be used as a catalyst for local adaptation. The positive experience of using ICTs for poverty reduction is often linked to use of the new options by organised self-help groups and collective organisations. Up-scaling poverty reduction with ICTs means increasing outreach and deepening impact.

7
ICTs can be used as a strategic tool for development. They also merit and receive growing attention for their instrumental value in implementing pro-poor policies. The deployment of ICTs **increases the effectiveness and efficiency** of all endeavours to reach the MDGs whatever the resources available. Mainstreaming ICTs pays off even when budgets are stagnating or shrinking.

8
Those countries mainstreaming ICTs effectively into their productive sectors **gain dramatically in competitiveness**, often to the disadvantage of others. It is a matter of economic survival to make appropriate use of ICTs. Therefore, the application or non-application of ICTs in an economy affects people living in poverty both directly and indirectly.

9
The **basic requirements for successful up-scaling** of poverty reduction through ICTs are (1) an enabling policy environment; (2) prioritising and creating conducive conditions for poverty reduction; (3) mobilisation of additional public and private resources. The Chennai Statement reflects these requirements.

Enabling Environment

10
A clear and enforced **legal framework** should include respect for freedom of expression, diversity and the free flow of information. A conducive environment for up-scaling includes **supporting infrastructure** such as electricity, internet connectivity, and a reasonable level of basic education. To meet pro-poor outcomes, such measures have to be combined with targeted pro-poor policies.

11
The acceleration of the introduction of **competition** in ICT infrastructure provision, including in the last mile, is key. It should be associated with investment in service development including local content to drive the demand for infrastructure.

12
Enhancing the adoption of **open source solutions** and strengthening user groups are key. Application of open source software/products in the public sector and encouraging its/their application in the private sector and by civil society is cost efficient, does not restrict adaptation to local needs – such as translation into local languages, reduces dependence on foreign firms, and does not create new barriers for local ICT experts, but instead strengthens their training and keeps the jobs in-country.

Poverty Reduction

13
Mainstreaming ICTs in **poverty reduction strategies** (PRS) is a key issue. The implementation of PRS can play an important role in achieving the MDGs and empowering people living in poverty. ICTs can be used to facilitate the PRS process. ICTs should be mainstreamed into the implementation of sectoral components, complementing the poverty-reducing priorities of the national ICT strategy.

14
In a conducive environment favouring poverty reduction, targeted **pro-poor regulations and policies** are key elements. They may include

- Building up *strong independent regulators* through capacity-building measures and the provision of resources to finance any resultant legal cases.
- Supporting research and awareness-raising throughout civil society.
- Transforming the policy environment through more *deregulation in favour of local communities*: (a) Licensing of air waves to grass-roots level institutions; (b) Representation of grass-roots level institutions on regulatory bodies.
- *Fast-track licensing* for innovative solutions such as Voice over Internet Protocol (VoIP), Wireless Fidelity (WiFi) and Very Small Aperture Terminal (VSAT), and licensing of community-based electronic media, in particular broadcast radio.

15
Meaningful poverty reduction must be based on a participatory needs assessment related to **empowerment, opportunity and security** of people living in poverty. ICT applications embedded in poverty reduction strategies should support demand-driven, solution-focused initiatives for, and with, disadvantaged people, characterised by applications and content that are highly contextualised. A pro-poor emphasis in infrastructure provision and content development applications is a priority. This should include the introduction of lowest-cost and transparent demand- and supply-side subsidies to ensure that access costs are affordable. The use of voucher systems could be an appropriate option for promoting private partnerships in subsidised public access provision to address the needs of those in poverty.

Resource Mobilisation

16
Up-scaling to reach the MDGs requires additional investment. **Public resources** are severely limited at the national as well as the international level. Despite the Monterrey Consensus, it is unlikely that official development assistance (ODA) will be increased substantially. The search for new sources of development financing (NSDF) is still in its initial stages. The options discussed include a byte tax and other ICT-related sources, which are not likely to materialise in the foreseeable future.

17
In order to ensure the best use of scarce public resources, maximum mobilisation of **private investment** is vital. Depending on the enabling regulatory framework, the existing infrastructure and the development potential, private investment can be mobilised, to a certain extent even in remote regions. The micro finance movement demonstrates that banking for people in poverty is feasible. Similarly, there is an untapped market for the private sector in general and for social entrepreneurs in particular, to bring connectivity, services and content to those in poverty.

18
Resulting in a hybrid form of private-public sources, national **ICT licensing obligations** should include funding mechanisms to mobilise finance for appropriate community initiatives, and to address the financing gap for small and medium enterprises (SMEs) interested in starting ICT businesses. Regulators must have the political backing and capacity to enforce compliance with universal service obligations (USOs) and to evaluate the effectiveness of the use of funds.

19
Financial, ecological and social sustainability is the triple bottom line for successful ICT-supported projects. Sustainability is contextual and dynamic. In a poverty-stricken rural context, social sustainability is as important as financial sustainability and requires a focus on local content creation. Having a longer-term perspective in mind, the question of profitability should be embedded right from the start when designing and planning poverty reducing projects with ICT-use. The drive for up-scaling and sustainability can itself become a challenge as it may cause a drift away from a focus on the poorest.

20
Technological progress reduces costs dramatically and lowers access barriers, which is of particular importance to people in poverty. When making a technology choice, information about the latest technological developments is useful in order to choose simple, context-related solutions that may not require high connectivity or high-level human capacity. Flexible platforms combining the strengths of complementary technologies, such as radio and internet, have often proved particularly appropriate.

The Way Forward

21
There are significant challenges in the **transition** to scaling up poverty reduction through the use of ICTs in national strategies, in terms of retaining local ownership, capacity building in local communities, developing sustainable business models and defining the level of institutional and public sector support.

22
National level advocacy is key for up-scaling poverty reduction through ICTs. The added value of global declarations, including this Chennai Statement, depends on the extent to which they are heard by governments, civil society and the private sector regionally, nationally and locally. In particular, the younger generation should be reached.

23
Global coalitions advancing empowerment, opportunity and security of people in poverty, including gender equality, education, health and democracy, are an effective and efficient channel for taking up-scaling concerns forward. In particular, intensifying South-South networking and dialogue should be pursued systematically.

24
Recognising the complementary roles of governments, the private sector and civil society, building **multi-stakeholder partnerships** (MSP) becomes a priority in implementing an inclusive information society based on the WSIS's vision and inspired by the Millennium Declaration. At the grassroots level, the capacity of community structures, such as self-help groups and other intermediaries, should be tapped and enhanced.

Follow-up

25
This statement is timed to inform the preparations for the second phase of **WSIS 2005** in Tunis. The declaration will be backed by a joint MSSRF/SDC discussion paper to be published early in 2005. The participants will use their networks to influence the WSIS process accordingly. MSSRF, SDC and GKP will host a side event during the PrepCom II in Geneva in February 2005.

26
In light of the outcomes of the WSIS, MSSRF/SDC intend to convene a **follow-up meeting** on opportunities and challenges for up-scaling MDG implementation through ICTs, involving stakeholders from the public and private sectors as well as civil society, not later than 2007. The objectives will be to:

- review the added value of the WSIS outcomes for ICT for poverty reduction (ICT4PR) and MDG implementation;
- present the main ongoing and planned ICT4PR up-scaling programmes;
- discuss the key challenges met in ICT4PR up-scaling efforts;
- exchange information on lessons learned and good practices in ICT4PR.

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Lessons for scaling up, from contributors to the Chennai Statement

A participative ICT approach, involving people from the needs assessment to monitoring, makes a difference.[31] When scaling up, this experience presents a major challenge, as the danger of embarking on a top-down and supply-driven expansion is ever present. The information gap lies not only on the poor people's side and the fact that they lack relevant information to improve their lives. Equally, there is an information gap with decision makers who are not sufficiently informed about poor people's situation and concerns. This makes participation in decision making mandatory.

Leadership matters, as does institutional ownership. A large number of successful pilot programmes using ICTs for poverty reduction are driven by committed individuals.[32] When up-scaling, this human component must not be lost and this may be the most difficult challenge. Making use of ICTs for poverty reduction results in more than a traditional business relationship. However, relying only on committed individuals significantly limits the up-scaling potential, because there has to be an institutional base to extend outreach and to increase the number of people involved without moving away from the poor as the primary target group. Up-scaling may also imply increasing benefits.[33]

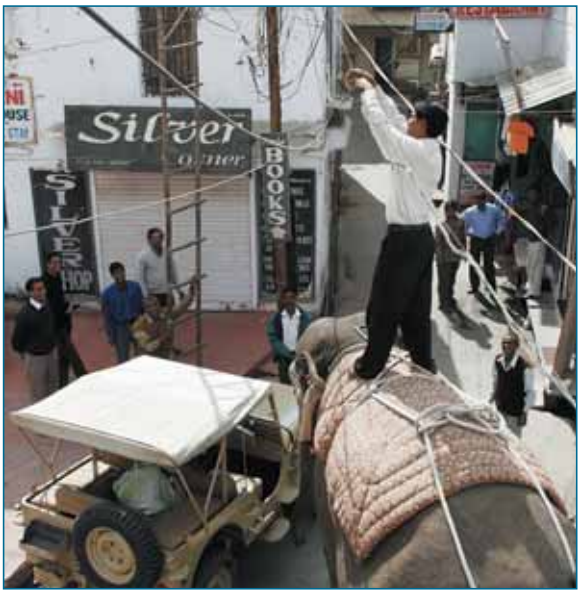
Adopting a community approach in ICT access has a number of important strengths.[34] It is a cost-effective way of up-scaling connectivity outreach. It allows for the combining of a multitude of functions of public interest (media, banking, other) and facilitates the integration of traditional and new media. A collective learning environment is created and a social space for interactions provided. The Philippine model of community e-centres[35] provides a demand and content driven reference framework for linking up community services with private sector involvement. The UNESCO CMC programme builds on radio as a key facilitator for community access.

ICT centres expand users' social networks.[36] They do this in several ways: (1) They provide legitimate spaces to socialise and work with different people in free and interesting situations; (2) The centres act as 'hubs' where different social networks can intersect; (3) Centres are connected to larger organisations and attract visitors, giving a sense that the locale is connected to a wider world. Restricted social networks reflect social norms that narrow people's mobility (often women's), access to information and resources, and their ability to interact with others to gain support and to organise themselves collectively. ICT access produces increased face-to-face communication within local social networks.

Multi-stakeholder partnerships are a promising and appropriate response to the complexity of tasks, to the need for resources to scale up, and to the fact that development is a shared responsibility of all sectors of society. A successful partnership has clear and mutually understood objectives, is based on mutual respect and trust of partners, involves pooling of resources, responsibility and benefits, and combines the diverse strengths of partners.[37]

Information and communication involve costs. Comprehensive and transparent budgeting provides a sound basis for decision making and sustainability. Public funds should focus on the production of public goods. Costing should distinguish between investment and operational costs, between pilot and replication costs, between commercially viable parts and the production of public goods. Eventually, community contributions in cash and kind are to be included. The design of cost recovery mechanisms should take into account the economic situation of the users.

A threshold level of physical and human infrastructure is required to make effective pro-poor use of ICT. For low income Asia and the Pacific it was observed that a country's income level, adult illiteracy and population density are guides to its capacity to adopt advanced forms of ICTs.[38] This lesson is also valid at the sub-national, e.g. the village, level. The low literacy level, as well as the weak infrastructure, in Sub-Saharan Africa puts this region at a clear disadvantage in adopting ICTs compared to Low Income Asian Countries. In decision making on public or private investment priorities, in project design, and in the choice of technology options (which are supposed to serve the poor) the physical and human infrastructures are determining factors.



A man attempts to fix a wiring problem while standing on an elephant, Udaipur, Rajasthan, India
QILAI SHEN | PANOS PICTURES

An adequate choice of technology largely co-determines potential pro-poor effects.[39] There is no such thing as technology neutrality. The distributional effects of different technology options have to be considered carefully. For example, the use of community radio provides local solutions to local problems without referring 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. "What is needed is a judicious blend of traditional and modern technologies depending on what would work best in a given situation."[40]

Content should receive as much attention as access.[41] The poor have to be at the centre of all the efforts, which must be people-centred,[42] demand-driven and in local languages. Physical access is just one element along the road to effective access and use. Investment in hardware should be matched by investment in local content creation and capacity building: as a rule, at least two thirds into software including capacity building, one third into hardware.

Pro-poor effects are more likely if ICTs are embedded in a larger, demand driven effort.[43] Ownership in defining the problem, as well as the solutions, is essential to avoid ineffective supply-oriented interventions. Technology should follow community needs. One-sided ICT-driven programmes are likely to fail. Effective efforts combine a number of elements to deal with an issue holistically. An example: ICT-supported information on AIDS-prevention or treatment may not have the desired effects if there are no condoms or drugs available or if people simply cannot afford them.

Those countries mainstreaming ICTs effectively into their productive sectors gain dramatically in competitiveness, often to the disadvantage of others. It is a matter of economic survival to make appropriate use of ICTs. Therefore, the application or non-application of ICTs in an economy affects people living in poverty, both directly and indirectly.

South-South exchanges and partnerships can be an efficient and effective way of learning.[44] Based on touring in South Indian villages, MSSRF has acquired a wealth of practical experience in sharing experience with interested partners in African, Latin American and Asian countries. It is an option to avoid the built-in bias towards Northern models. Moreover, MSSRF, together with OneWorld International, created the Open Knowledge Network (OKN), which connects villages on different continents by using World Space Radio. OKN is still in its experimental phase.

Negative impacts need to be taken into account.[45] As mentioned earlier, benefits of ICT supported interventions may be unequally distributed and deepen economic, social and cultural divides, instead of reducing poverty.[46] Moreover, an ITU report lists negative effects such as e-waste, environmental problems, and others (electromagnetic fields, muscular pain from poor posture, poor eyesight, 'infostress', spam etc.). While some of these are mainly of concern to developed countries, spam has been described as "a significant and growing problem for users, networks and the internet as a whole."[47] Apart from such negative effects as decreasing confidence and trust in online activities, losses in productivity and financial costs are felt by all alike, since "expecting that […] all become power users and keep up to speed with the latest user side filtering and MS [Microsoft] security patches is unrealistic."[48]

Chapter 4
From a small beginning to a mass movement: the story of India's Mission 2007

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From a small beginning to a mass movement. That is the story of India's Mission 2007, a mission for mobilising the power of information and communication technologies (ICTs) for meeting basic human needs. A mission that will harness the power of partnership to reach the unreached, the poor and the marginalised, and help them overcome poverty, hunger, malnutrition, and illiteracy. It is the story of a dream that will come true during this decade. The dream is to extend the knowledge revolution and its benefits to the millions living in the more than 637,000 villages of India for improving their lives on an environmentally sustainable and socially equitable basis. It is the grand vision of Professor Monkombu Swaminathan, the octogenarian who came under the influence of the Gandhian ideal of Antyodhaya as a young man and who has always set seemingly impossible targets for himself and his team but manages to achieve in the end.

A knowledge worker helping children learn to use computers

Subrahmania Bharathi, the great Tamil poet whom Swaminathan admires, stressed that nutrition and education are like two legs of a human being; both are important for an active and productive life. But even after several decades of independence, nearly 25% of India's population suffers from inadequate nutrition and nearly 30% is illiterate, and women suffer far more than men. One in every 11 children does not live to see its fifth birthday. And millions of children do not go to school at all. While India has moved into the premier league of world economic growth, the pick-up in growth has not translated into a commensurate decline in poverty. The Human Development Report 2005 ranks India 127th among 177 countries overall and 58th among 103 developing countries on the Human Poverty Index (HPI-1). While some bright graduating engineering students from leading universities receive job offers of $25,000 per year, about 26% of Indians are living below the poverty line. Such gaping differences do not augur well. It is not only a moral issue but it can cost society dearly. As recent events have underscored and as Secretary General Kofi Annan has pointed out we cannot have security without development. The poor do resent such disparity. Last year, despite some good performance in the information technology sector, two state governments in the information technology heartland of India, belonging to different parties, were voted out of power by the people largely because the benefits of the IT revolution did not percolate to the rural poor.

Can we not harness the power of modern science and technology to change all this? After all it is science which made the advanced countries achieve that status. That is precisely what Swaminathan wants to do – to deploy the new information and communication technologies (ICTs), which so far have helped create the digital divide, as allies in the equity movement to bring about a social revolution. In the 1960s, when many experts had written off India as a hopeless case, he used genetics to bring about the Green Revolution that transformed India from a chronic food importer into an exporter of food grains.

The Small Beginning

The seed for the new revolution was sown in 1997 when the M S Swaminathan Research Foundation (MSSRF) embarked upon a programme that would use access to knowledge as the key to holistic rural development. A few months later, in January 1998, the Information Village Research Project was established with financial support from the International Development Research Centre (IDRC), Canada. Initially, MSSRF set up information centres, later to be rechristened knowledge centres, in three villages near Pondicherry, to provide the information relevant to the people's daily lives. As there was no prior experience (nor any model to follow), progress was slow and faltering. Indeed, a few of the early centres housed in individuals' homes had to be closed down, as the benefits were not reaching all members of the community, especially people belonging to the historically marginalised *Dalit* community. Social inclusion, reaching the unreached and voicing the voiceless, are articles of faith in the MSSRF-IDRC ICT-enabled development programme.

An expert testing
Tsunami affected soil.

Both the MSSRF staff and the volunteers from the local communities learnt from such experience and helped expand the network to 12 villages in the next few years.

These village knowledge centres are connected by a hybrid wired and wireless network – consisting of PCs, telephones, VHF duplex radio devices, spread spectrum and email connectivity through dial-up telephone lines – that facilitates both voice and data transfer, and has enabled the villagers to get information they need and can use to improve their lot. The 12 villages are connected in a hub and spokes model, with one of them serving as the hub and value addition centre. The knowledge centres are open to all, irrespective of age, sex, religion, caste, and level of literacy and education. The project draws its sustenance from its holistic philosophy that emphasises integrated pro-poor, pro-women, pro-nature orientation to development and community ownership of technological tools against personal or family ownership, and encourages collective action for spread of knowledge and technology. The bottom up exercise involves local volunteers to gather information, feed it into an intranet-type network and provide access through nodes in different villages. In addition the knowledge centres use traditional means of communication, such as notice boards and public address system, and publish a twice-monthly community newspaper so that even those who cannot come to the centres can be served.

Value addition to the raw information, use of the local language (Tamil) and multimedia (to facilitate illiterate users), and participation by local people right from the beginning are the noteworthy features of the project. Most of the operators and volunteers providing primary information are women, thus giving them status and influence. Most centres came up because of demands made by the community. In particular, knowledge centres were deliberately located in a few *Dalit* villages.

Left to itself technology would only exacerbate existing divides and deliberate efforts must be made to take the advantages of technology to the needy. Even in advanced economies like the United States analysts have shown stubborn racial disparities in technological access and participation, and digital divides fast leading to racial ravines.

A knowledge centre manager interviewing a farmer

The knowledge centres provide the village communities the information they need in a variety of areas, such as agriculture, healthcare, education, markets, government entitlements, employment opportunities, weather, and local news. Information needs vary from village to village; for example, fishing families in coastal village are keen to get accurate forecasts of wave heights and location of fish shoals, whereas farmers in an interior village may look for help in dealing with sugarcane rot or in cultivating mushrooms. There are also gender differences in information needs. Women, for example, are more interested in health-related information and they would like to receive it from women doctors. That is why it is important to provide timely locale-specific information and in the local language. And the information provided should be authentic and useful in the immediate context. Which is why staff in the hub work closely with experts in partner organisations such as agricultural universities, research laboratories, field stations, human and animal health institutions, marketing organisations, and commodity exchanges. They act as two-way communication channels between the people and the experts. After visiting some of these knowledge centres, Prof. Bruce Alberts, former president of the US National Academy of Sciences, said, "I envision a global electronic network that connects scientists to people at all levels – farmers' organisations and village women, for example. The network will allow them to easily access the scientific and technical knowledge that they need to solve local problems and enhance the quality of their lives, as well as to communicate their own insights and needs back to scientists." Notice the emphasis on two-way communication. As envisioned by Prof. Swaminathan these centres are a crucial link in the lab-to-land, land-to-lab and land-to-land linkages that are essential for knowledge-driven development.

Although the MSSRF project continues to experiment with a range of technologies, it is essentially a people-centred project, firmly focusing on people, their contexts and their needs. The project recognises the local people's right to know. From the very inception, content, connectivity and capacity building were given concurrent attention.

While access to relevant information may be key to development, mere provision of information is not enough. Information is a necessary but not a sufficient condition for empowerment. Information has to be linked to the means of using the information. Poverty will persist so long as a large proportion of the rural population is engaged only in unskilled work. Knowledge centres should bring about a paradigm shift from unskilled to skilled work and from routine on-farm to value-added non-farm activities. For that to happen, often people may need to acquire new skills and funds. Also, we should learn to use ICTs for bridging gender, social, economic and technological divides. The challenge is in adopting a holistic information access-enabled development strategy and using ICT as a cross-cutting instrument in different aspects of the strategy. This is precisely what MSSRF has been doing. While the knowledge centre is at the core of the ICT for rural development movement – somewhat similar to the village temple (or the well) where people gather not only to pray (or fetch water) but also to socialise, chat, exchange notes and relax as a community – we build around it several other initiatives and programmes, such as self-help groups, training and skill building, microcredit, micro-enterprises, markets, literacy and education in each one of which information plays an important role. Village communities working with the MSSRF knowledge centres, especially women self-help groups, are producing and marketing handmade paper, biopesticides, mushrooms, ornaments and decorative items made from seashells. What is important is not just the money these women have started earning but the way it helps them make their children's life better. Independent evaluation has shown that ICT-enabled knowledge centres can indeed make a difference in the life and well-being of rural communities.

Other initiatives

While the IDRC-supported MSSRF initiative was developing and getting national and international attention, several other initiatives (in the genre of telecentres) sprang up in different parts of India. Not all of them followed the same model. Some were government supported (e.g. the NIC-supported centres in the North-east), and others adopted a revenue model (users pay for services right from the beginning). Two of them were established by large corporations, essentially to reach out to clients and supply them with products useful to them and procure raw materials. One of t hem, ITC's e-chaupal initiative, won this year's Development Gateway award. n-Logue, an IT company largely promoting the technologies developed by the Indian Institute of Technology, Chennai, has a franchise model, wherein it sets up an info kiosk (PC with internet and videoconferencing facility, scanner, photocopier, etc.) at a low cost and trains the kiosk owner, and the owner provides different services to the people in the neighbourhood and tries to earn a reasonable income. TARAHaat help village entrepreneurs set up internet kiosks to provide useful services to the local communities.

Today India has the largest number of info kiosk/ telecentre initiatives and there are many reports on these initiatives. Unfortunately, these are yet to spread in rural India in a big way. Interest in ICT for development, and in particular telecentres, is growing around the world. There is also worldwide interest in using ICT to accelerate progress in achieving the United Nations Millennium Development Goals. Taking the benefits of ICT to every village in India is an idea whose time has come.

If only all of these different types of initiatives could come together and learn from each other, then the partnership could transform rural India quickly.

Winning Support

India is a mini-continent with diverse cultures, languages and ecological and climatic zones, and clearly it will be impossible for any single organisation to set up telecentres, let alone usher in the knowledge revolution, in all of rural India. It is absolutely essential to mobilise the power of partnership and take the programme forward in mission mode, and it is especially important to involve the government in the proposed public-private partnership.

In order to give concrete shape to the idea of 'Every Village a Knowledge Centre' and win the support of other stakeholders, MSSRF organised a number of national consultations. As a first step, in August 2003, MSSRF set up the MSSRF-Jamsetji Tata National Virtual Academy for Food Security and Rural Prosperity (NVA), named after a visionary Indian industrialist and philanthropist, with financial support from the Tata Social Welfare Trust. Unlike the major science academies of the world, the NVA is an academy of grassroots workers who have distinguished themselves by their commitment to public good and community welfare. The mission of spreading the knowledge revolution cannot succeed without the support of a very large number of such committed grassroots workers spread all over the country. NVA organised a Policy Makers Workshop in October 2003 to discuss and build on MSSRFs' experience of taking ICT-enabled knowledge provision to resource-poor families. The workshop's recommendations for policy makers focus on locally relevant content, community media, gender inclusion, financial sustainability, job-led economic growth and political commitment. It is at this workshop that Prof. M S Swaminathan articulated the need for a National Alliance to achieve Mission 2007.

At the first Steering Committee meeting of the NVA held on 21 February 2004, it was decided to launch an Every Village a Knowledge Centre Movement in collaboration with academia and appropriate Government and non-Government organisations, by taking advantage of the synergy between different technologies, particularly between the internet and community radio, and symbiosis among all institutions engaged in technological and skill empowerment of the poor. It is significant that the Mission talks about every village a knowledge centre and not a knowledge centre in every village, thus recognising the need to tap the enormous indigenous knowledge native to the people.

On 19–20 May 2004, on the occasion of the death centenary of Jamsetji Nusserwanji Tata, NVA held a National Consultation on forming a National Alliance for Mission 2007: Every Village a Knowledge Centre, designed as an offering of the S&T and academic community, civil society organisations, private and public sector industry, financial institutions, international partners and mass media to the nation on the occasion of the 60th Anniversary of India's independence on 15 August, 2007.

The Mass Movement

Armed with the support of the many partner organisations gathered through these consultations, the NVA organised, in collaboration with OneWorld South Asia, a large national policymakers' workshop with key persons in government, corporate sector, academia and civil society organisations. The workshop, held on 9–10 July 2004 in New Delhi, agreed on an action framework to take the benefits of ICTs to every village in India by August 2007 and came up with a joint action framework to implement this plan.

The objective of Mission 2007: Every Village a Knowledge Centre is to facilitate and accelerate the setting up of village knowledge centres throughout rural India to generate knowledge-based livelihoods. The workshop highlighted the need for policy intervention, such as delicensing and making the highly regulatory environment more people friendly. The alliance will also promote entrepreneurship in the villages, and address the growing concern about adverse social, economic and political implications of the expanding urban-rural divide in knowledge, skill and technological empowerment. Policymakers and agencies like the Indian Space Research Organisation, All India Radio, Telecom Regulatory Authority of India, Indian Institutes of Technology, and the Ministries of Information & Broadcasting, Information Technology, Science and Technology and Panchayat Raj have offered to support the initiative.

It was decided that the Mission would be implemented on the principle of social inclusion, social relevance and gender equality, keeping transaction costs low and an ICT-stakeholder group movement would be fostered to give a sense of ownership to the people. The National Alliance for Mission 2007 representing a coalition of the concerned would facilitate and accelerate the spread of the rural knowledge centre movement and will function, like the Consultative Group on International Agricultural Research (CGIAR), without a formal legal structure. The Alliance would have informal organisational structures at the national, state, district and local levels that will plan and implement the objectives of Mission 2007. The aim is to provide a platform for symbiotic partnership at each level. Five Task Forces were organised to deal with Connectivity, Content, Care & Management, Capacity Building, and Coordination. These task forces have since submitted detailed reports which were discussed in July 2005 in New Delhi at the second convention of Mission 2007.

Inaugurating the convention, the President of India, Dr Abdul Kalam, said "Nearly 700 million people of India live in the rural areas in 637,000 villages. Connectivity of village complexes providing economic opportunities to all segments of people is an urgent need to bridge the rural-urban divide, generate employment and enhance rural prosperity. We need to innovate to increase connectivity to the villages, making clusters out of them even while retaining their individualities." He was immensely pleased to hand over the Fellowships to the first batch of more than 130 Fellows of the NVA, who, in the words of Swaminathan, will be the torchbearers of the knowledge revolution in rural India. He will be handing over the Fellowships to the second batch of Fellows in the first week of January 2006 at Hyderabad. The Finance Minister of India, Mr Palaniappan Chidambaram, announced his readiness to allocate the start-up funds, to the tune of US $1.5 billion, needed to implement the programme. The Minister for IT, Mr Dayanidhi Maran announced that his ministry would join the Mission by setting up 100,000 community service centres. The Minister for Panchayat Raj, Mr Mani Shankar Iyer, offered the support of his ministry and that of the 237,000 panchayats and suggested that the village knowledge centres be set up in the Panchayat office buildings throughout the country. Union minister of state for planning, Mr M V Rajasekharan, suggested that banks should provide youths concessional funds to establish village knowledge centres. With such wholehearted support of the government, the Mission is bound to succeed. Besides, there are other key factors such as the leadership of a visionary who has transformed what initially looked to most an impossible task to a doable one; a very large public-private partnership including academia (e.g. Indian Institutes of Technology, University of California, Berkeley), industry (e.g. Nasscom Foundation, Microsoft), NGOs (e.g. Azim Premji Foundation, Development Alternatives), government (e.g. Indian Space Research Organisation), and international development agencies (e.g. IDRC); carefully thought out Fellowship and training programmes to attract young rural men and women who would manage the village knowledge centres, and some excellent models to follow. On top of it, soon a clutch of key development institutions will form an International Support Group for the Mission.

The environment is also ripe for ushering in the knowledge revolution in rural India. We are blessed with political and intellectual infrastructure, vibrant media and a flourishing democracy going up to the village level. The government is focusing its attention on rural India and has recently set up a Knowledge Commission. The Telecom Regulatory Authority is now building strategies for accelerating the growth of telecom infrastructure and for bringing down the costs of communication. Many national institutions – state open universities and the National Informatics Centre, for example – are keen to reach out to rural masses. State governments are keenly interested in harnessing ICTs for sustainable development. ISRO has launched a satellite [Edusat] specifically dedicated to education as well as the village knowledge centres programme. Computer manufacturers are trying to produce low-cost computers. Self-help groups in many parts of the country are maturing rapidly and can shoulder key responsibilities.

The National Commission on Farmers, chaired by Prof. Swaminathan, has given many suggestions for improving public policies that are needed for the success of Mission 2007. These include judicious use of the universal service obligation funds, extending the reach of the 30,000 BSNL (the public sector telephone company) exchanges through wireless technologies and extending each of the exchanges to cover an additional 20 villages, enunciation of an innovative rural ICT policy, using the unlit (dark) portion of the fibre network, allowing civil society organisations to set up community radio stations, enabling Panchayats and self-help groups to take advantage of ICTs, setting up village knowledge centres in the poorest regions (e.g. areas declared as hunger hotspots and districts identified for rural employment guarantee) on priority, creating a cadre of more than a million NVA Fellows (at least one male and one female in each village), outsourcing government functions (e.g. digitisation of land records, local resource mapping) to those who run the knowledge centres, and setting up a venture capital fund to support rural service providers and knowledge centres. In addition, the support system for a rural knowledge revolution should be complemented by a national Digital Gateway for Rural Livelihood Security, says the Commission's report.

Assessing salt tolerance of rice plant.

The Alliance will work with Panchayats, self-help groups, common interest groups, and community-based organisations, and will help to amalgamate the work of individual stakeholders. There are numerous ongoing rural ICT projects in different parts of the country. The strengths of the individual partners may vary but their collective strength is considerable. It is this collective strength that the Mission strives to mobilise. Importantly, the Mission does not prescribe any single model; the communities and the implementing agencies can choose an appropriate model that would meet the local requirements.

Conclusion

Mission 2007, perhaps the largest scaling up programme in the history of ICT-enabled development, embodies two key elements, viz. sharing knowledge and mobilising the power of multi stakeholder partnership. It has already brought the programmes of the government closer to the aspirations of the people. It has brought people with very different notions of how telecentres should be run to work with each other. The not-so-rigid structure allows members in the network to contribute as much as they can to achieve a common goal in an atmosphere of freedom. While connecting the entire country may be done through a top-down approach, content creation and knowledge management will definitely follow a bottom up approach. When the Mission achieves its goal, not only will it have reduced the rural-urban divide but it would provide a platform for achieving all the Millennium Development Goals, and provide a model for the rest of the world.

Chapter 5
Local radio in the Information Society: technology, participation and content in Africa

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Radio is one of the most important information and communication technologies in many developing countries and should be included in any discussions about what kind of Information Society will contribute to achieving the Millennium Development Goals.

One of the reasons why radio is often excluded from discussions about ICTs is because it has been around for so long. It is a traditional communication technology, perhaps not considered to be part of the new information revolution, yet it has many characteristics which make it as important as the internet in providing access to information and a platform for interactivity. Radio continues to have extremely wide penetration and reach[49], particularly in Africa, South America and parts of Asia. It is well-placed, even in more remote areas, to provide and interpret information in a relevant way for its listeners. Just as importantly, local radio stations can offer ordinary people a relatively low-cost way to participate in discussions about the local or global issues that are top of their own agenda. In fact, one of the most exciting information revolutions in the last 15 years is this radio revolution, which has swept through many parts of the developing world, and still continues today.[50]

In Africa, one of the driving forces behind these changes has been the decision of governments – sometimes because of external pressure – to withdraw subsidies from state-owned nationwide broadcasters, and to allow a greater diversity of radio stations to go on air. Today, a media map of Africa would show that the media landscape has changed beyond all recognition in the last decade, with the mushrooming of local FM radio stations in cities and towns across the continent. Whereas global media, and to a certain extent regional media are combining and consolidating, in many African countries there is a different trend at the local level. Patterns and blends of ownership are emerging in which local radio stations describe themselves in different contexts as private, independent, religious, commercial and community-owned – or a combination of these. This can at its best lead to a diverse and dynamic radio environment, with a strong potential public-interest focus. The pattern may vary from country to country depending on the legal, political and social environment, yet the underlying change has been the establishment of a web of local radio stations which has become part of the fabric of day-to-day life for millions of people.

Yet the reality is that many radio stations are precarious and struggle to survive. They find it difficult to meet their operating costs solely from advertising and despite their potential contribution to development processes, because radio stations are not development projects or NGOs, they are not positioned to attract funds from donors. They rarely have the capacity to organise themselves into groups or associations to lobby effectively for grants and subsidies. Even the most fundamental costs are often difficult to resource. In Uganda, for example, at one point in 2005 up to 40 radio stations out of a total of nearly 100 stations on air nationally were in arrears on their broadcast license fees, and were threatened with closure.

Radio's familiarity, reach, affordability and accessibility are not the only reasons why it plays such an important role in the information society: it is also extremely well-placed to use newer technologies[51]. Broadcasters can use email and the internet to find information locally and internationally, and mobile telephones to enable reporters to file news. They need PCs to type scripts, edit and archive programmes, interviews and other audio material, and minidisk recorders to enable them to get out into their communities to collect material that can be easily edited.

Because a large number of African radio stations are in a deeply vulnerable situation, under-skilled, under-resourced and under-equipped, this severely limits their capacity to fulfil a public-interest role. In audits carried out by the Panos Network throughout Africa, we asked radio stations to prioritise what they needed to produce better public-interest content. They often prioritised access to technology[52] and the skills to use it[53]. In response to these identified needs, Panos, in partnership with AMARC and OneWorld International, launched an initiative funded by the UK Department for International Development (DfID), as part of DfID's Catalysing Access to ICTs in Africa, or CATIA programme[54]. The CATIA Programme aims to increase access to ICTs for the poorest of the poor, and as we have seen above, radio remains by far the most accessible technology for the majority of poor people. CATIA 2b, one of the strands of CATIA, was designed to address directly some of the problems faced by these small local radio stations through the provision of in-station technology and access to technology at central hubs, and by evaluating its impact on the production of public-interest content.

A Tale of Three Villages

It is early 2004 in Uganda, and nearly 100 radio stations are jostling for space on the FM dial. Radio Paidha 87.8FM is one of them, a few hundred metres from Uganda's remote north-western border with Democratic Republic of Congo. Broadcasting in English and twelve Ugandan and Congolese languages, across a porous border to a conflict zone, Radio Paidha is a privately-owned station set up in 1998 that describes its mission as "to contribute to rural economic development through offering quality programmes and messages to local and foreign listeners at an affordable cost". Radio Paidha's funding comes solely from advertising revenues, but these are insufficient to replace any of the three broken minidisk recorders, and the ageing computers on which the 7 news reporters rely. The station can access the internet, but only when a reporter visiting Uganda's capital Kampala prints out web pages, and faxes them back to Paidha.

Moving south from Paidha down through northern Uganda to Lira, Radio Rhino is one of five privately-owned stations compete for audience, advertising revenues, and influence in this small town on the fringes of territory held by the Lord's Resistance Army. Radio Rhino is, like Radio Paidha, funded largely through advertising revenues, but in Rhino's case, these barely keep them afloat. Radio Rhino is powered largely by a generator, fuelled by petrol exchanged for on-air adverts for the local petrol station. The station has one computer, used as a doorstop since it broke down, and has no word processing, email or internet facilities. To access the internet, one of the news editors runs down to the local internet café, offers an advert in exchange for time online, and, because the station can't afford to print, transcribes international news by hand, before running the script back to the station for broadcast. The station's one minidisk recorder (with its two discs) is in the studio, leaving reporters without adequate recording equipment to go out into the field. The station keeps its longhand archive in a cupboard for three months, and then throws it out for lack of space. Despite the obstacles, Rhino's mission remains to "contribute to the unity, social and economic development of Lango sub-region and the Nation at large through community active participation by way of information-gathering, -sharing, -processing and -dissemination."

An hour or two from Lira down a pothole-ridden road lies the small rural town of Apac, served by Radio Apac, which describes itself as a community-owned radio station, aiming to "educate and sensitise the local community". Like Radio Rhino, Radio Apac has one minidisk recorder, but is blessed with three donated PCs, two equipped for digital audio editing, in an airless room in the cramped station building. When things go wrong, as they often do, Radio Apac does have access to a technician, but since he also works for other radio stations, including those in Lira, Radio Apac sometimes has to wait days for him to come. To access the internet, staff go one kilometre down the road to an internet café, where they print off what they need.

It is easy to see what links these three stations. All take advertising revenues, but it barely covers their costs. They all have a strong commitment to news, but can hardly resource their newsrooms. Most importantly, they all want to make programmes for and about their audiences, but they simply do not have the resources or the technology to do so.

Catalysing Radio Stations' Access to ICTs

Paidha, Rhino and Apac were part of a network of 10 stations selected as part of a pilot project within the CATIA 2b initiative to see what impact high levels of technical and editorial support have on their content. Over the last two years, the stations have received packages of support including production equipment, PCs and satellite internet connections. At the same time, Panos built a digital production studio in Kampala, and employed a full-time commissioning editor based at the studio. He ran a series of workshops and forums at the studio and in the stations, aimed at giving the reporters the skills to use new technologies to improve programme-making.

The editor also invited the stations to apply for grants to produce programmes or series that stations would otherwise not have the resources, skills or time to make[56]. In their proposals, stations were required to show how they would include a diverse range of voices from their communities, and how the programme would generate or highlight debate.

Two years later, Apac, Rhino and Paidha are still struggling to survive, but things are looking up. All three stations have been making heavy use of their new minidisk recorders and microphones, thereby improving broadcast audio quality, and broadcasters have also reported much greater freedom to travel round the villages the station reaches. Paidha has, since the introduction of its internet connection, become a local news leader, reporting on national and world events that previously would take days to reach their audiences. Radio Rhino's new PC and printer have cut down on production time, allowing producers to access websites from the station, to type their scripts, to archive programmes on CD, and to maintain email contact with colleagues in Kampala and in other radio stations. Apac has tried to part-fund its internet connection by opening a small internet café on its premises, and offering low-cost web-literacy courses to local people. And feedback from listeners shows that they have noticed the change in the quality of broadcast programmes, and feel more involvement and ownership in their local stations.

Maintaining the solar panels which power Radio Douentza, Mali.
CRISPIN HUGHES | PANOS PICTURES

Another part of the initiative brought broadcasters together every three months to discuss technology and public-interest content, and one result of this has been that some stations are now collaborating on magazine programmes and sharing reports and resources. At one of these forums, broadcasters expressed a common feeling that donors were more likely to fund NGOs to make radio programmes than to give money directly to radio stations themselves to make professional content. One concrete plan emerging from this was that the broadcasters decided to organise themselves to approach donors directly for funding.

Over the course of the project, the need for another piece of technology emerged during a workshop in Lira. Violence between different ethnic groups had erupted in the district of Lira, and Panos convened a workshop for talkshow hosts from 5 radio stations in and around the town. The presenters discussed how they could make sure that neither they nor their callers were broadcasting one-sided or over-emotional views that might incite further violence. One of the things that they lacked, they said, was the technology to be able to screen and filter callers to their shows. Callers phone straight through to a mobile phone or (more rarely) a fixed line in the studio. Stations have no producers to screen callers before they go live on air, and they cannot afford the technology needed to delay live the phone calls by up to 30 seconds in order to filter out unwanted incitements to violence.

There is no safety net for stations like these, and providing technology alone was certainly not a magic bullet. However, the interventions made by Panos and other CATIA partners show that the impact on content of providing new technologies to stations like these can be profound, particularly when complemented by the permanent presence of a skilled local editor and trainer to provide focus and support, and to create and facilitate links.

Dogon women listening to the radio as they work, Douentza, Mali.
RHODRI JONES | PANOS PICTURES

While the high cost of satellite internet access will be too expensive for stations to bear when funding runs out, the project has shown what a difference the connection would make to the stations. It was also a chance to explore whether they would be able to use their internet access as a revenue stream by selling access to other organisations or groups in the community, as Radio Apac has attempted to do. The results are yet to be conclusive, but there seems to be little likelihood that the stations will be able to recoup connection costs until a critical mass of local population with purchasing power emerges. In the meantime, the impact shown by the project will be used to advocate for ongoing support until this critical mass can bring down internet access costs.

Monitoring and evaluation in six countries and assessments now underway are expected to provide more concrete evidence of the relationship between technology and participatory content. One of the limitations of this project has been the extent to which stations have been able to gather usable feedback from their listeners. There is still a need to conduct more systematic analysis with audience groups to find out how the broadcast content affects their understanding of and capacity to discuss and act on issues. In the audits carried out at the start of the project, Panos found that when radio stations were asked to prioritise their needs, they regularly put audience research at the bottom of the list, particularly when there was no real market for selling advertising. If development agencies want stations to prove impact or explain audience interaction clearly, ways must be found to finance stations and build their capacity to carry out audience research.

Due in part to the demonstrated impact of small-scale initiatives such as the Panos project and others, the international community is starting to consider seriously the possibility and value of up-scaling effective funding to radio stations in sub-Saharan Africa and other parts of the world.

However, it is not yet clear how this might be done and what funding mechanisms might be used[57]. There are several problems that need to be addressed, by donors themselves as well as by broadcasters. Much valuable public-interest broadcasting can be done by privately-owned local stations, but donors may be wary of giving money to radio stations in the private sector, just as they may be wary of giving money to government-owned or public stations. Community radio stations still need massive investment, but are generally more organised and networked than private stations, with the support of organisations such as AMARC. While a few stations in areas of conflict have received high levels of funding because their role in conflict transformation has been recognised, thousands of other stations find it difficult to show donors evidence of their impact on development. Donors require hard data and promises of sustainability, when in reality stations struggle to gather evidence, and there is little possibility of them surviving into the medium or long-term without grants.

Projects such as CATIA are demonstrating that stations use technology to increase their capacity to play a significant role in local development. The project has not come to any conclusions, however, about the impact of new technologies on stations' chances of long-term survival. The debate about the most strategic way to support the thousands of radio stations in this position needs to happen urgently in order to address the challenges of sustainability.

In order to respond to the renewed interest from donors in the role that radio can play in development, broadcasters from all sectors of the African radio sector – private, public and community – need to provide evidence and build their case for strategic support. There is a significant role the international community must now play to support this movement. But in the meantime, stations such as Paidha, Rhino and Apac won't survive without continued support from initiatives such as CATIA.

Chapter 6
Building microfinance through ICT innovation

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Upscaling ICT for Development – a 'demand-side' approach

Since the emergence of a distinct ICT for Development (ICT4D) sector, advocates have said that ICTs are 'enablers' or 'tools' for development, rather than ends in themselves. The implication of this is that impetus for upscaling ICT4D will primarily come from the demand-side. Advocates not only need to demonstrate effective ICT4D applications but, more importantly, they need to find those applications that capture the imagination and involvement of many, and provide a compelling case for investing in ICT infrastructure and for getting ICT policy and regulation framework right.[58] ICT-enabled banking services for the poor may be one such application.

Electronic commerce has its genesis in the banking sector. Over the last three decades, banks have transformed their business from paper-based systems to fully integrated ICT-enabled systems. E-commerce has become so ubiquitous that, in some economies, cash is now almost superfluous. Cash is used for only the smallest transactions and even this is poised to be replaced by a 'micropayments' service, where consumers pay for small items through their mobile phone, or through a value-carrying smart card. It could be argued that ICT-enabled banking services were the application that propelled us into the 'Information Economy'.

Might the same evolution occur in less developed countries? At this point it time, many microfinance practitioners see ICT innovation as a key strategy in efforts to take microfinance to the next level in terms of outreach and sustainability. The pending roll-out of ICT-enabled microfinance services represents a paradigm shift for the sector. It will change fundamentally the business models and methodologies that microfinance practitioners hold dear. All of this makes the subject of 'Microfinance and ICT Innovation' quite central to the Poverty Reduction agenda, whether one approaches that agenda from a microfinance point of view or an ICT for Development point of view.

2005 is an opportune year to progress the 'Microfinance and ICT Innovation' discussion, being the International Year of Microcredit and also the year of the second phase of the World Summit on the Information Society.

Introduction to microfinance

Microfinance is the provision of relevant and affordable financial services to poor households. The 'micro' prefix refers to the size of the financial transactions; it does not imply that the microfinance providers (MFPs)[59] themselves are small.[60] Microfinance is primarily concerned with credit and savings although, in recent times, allied services such as insurance, leasing, payment transfers and remittances are being introduced to the mix. In the early days, the forerunner known as 'microcredit' was focused on providing working capital to people who generate income for themselves in very small business activities. While this important emphasis remains, the sector has broadened its definition to *the delivery of financial services to poor households so that they can manage their financial resources more effectively*. Hence the more recent but broader descriptor, 'microfinance'.

Providing microfinance to poor clients requires innovative operating methods to manage risk and reduce transaction costs. Poor households do not usually have physical assets to offer as collateral for loans, so MFPs have developed substitutes. The most common form of substitute collateral has been the formation of groups of borrowers and the establishment of joint-liability procedures, where loan group members effectively guarantee one another's loans. To reduce transaction costs, MFPs primarily deal with these loan groups rather than with individual clients, and they outsource certain administration tasks to the groups.

Some MFPs have developed from existing community-based savings and loans cooperatives. In India, for example, these are referred to as 'self-help' groups. Other MFPs have evolved out of the revolving loan programs of charitable non-government organisations, which offered loans to help beneficiaries develop income-generating activities. Other MFPs have been established by commercial banks or government-owned development banks, either as a response to their observation that providing financial services to the poor could be a suitably viable business opportunity, or as a response to government edict that they provide financial services to all strata of society, including the poor.

Since the early 1990s, a major emphasis within the microfinance sector has been on institutionalisation of microfinance activities, including building the quality and capacity of the governance and management of MFPs, and the development of computerised Management Information Systems (MISs). This institutional development is necessary for a number of reasons. First, if MFPs accept client deposits, they are generally required to meet prudential requirements as defined in local banking laws. Essentially, they are required to become licensed banks. Second, institutional maturity is needed to enable and manage growth in client outreach. Growth in the client base allows the MFP to reap advantages of scale, thereby achieving a greater degree of financial sustainability.[61] Third, institutional maturity is necessary to attract capital investment, whether concessionary or commercial, from external sources.

The overriding mission of an MFP is to provide financial services to poor households on a financially sustainable basis. While most MFPs have a pro-poor, development-oriented emphasis, they are more correctly understood as banks rather than as (charitable) development organisations. Indeed, many MFPs are licensed, commercial banks.

The microfinance themes of 'outreach' and 'sustainability'

There are two current imperatives within the microfinance sector – 'increasing outreach' and 'improving sustainability'. There is, however, a creative tension between these two imperatives. On the one hand, if 'increasing outreach' is taken to mean 'more clients from a similar demographic', then 'outreach' and 'sustainability' are effectively synonymous terms. Increasing client outreach provides economies of scale that in turn makes the MFP more efficient and therefore more sustainable, at least in immediate financial terms. It is a case of 'more of the same', while continually seeking incremental improvements in operational efficiency.

On the other hand, if 'increasing outreach' is taken to mean 'targeting hard-to-reach clients' such as people living in remote areas, then 'outreach' and 'sustainability' are effectively competing terms. Reaching clients in remote areas is relatively expensive, which makes the MFP less efficient and therefore less sustainable. This is the real outreach challenge for MFPs because it requires new, as yet unproven business models and processes, including technological innovation.

Microfinance and ICT innovation

Back-office management information systems

Many microfinance practitioners see ICT innovation as a key strategy to take microfinance to the next level in terms of outreach and sustainability. The most fundamental ICT application is the back-office MIS. A suitably sophisticated Management Information System (MIS) is prerequisite for the MFP to monitor the quality, sustainability and efficiency of its loan portfolio, to monitor development impact, and to manage general administrative tasks. It is not possible for an MFP to upscale significantly without an MIS that can grow with the institution.

The larger MFPs have sophisticated back-office systems based on the same functionality provided by mainstream banking software. Indeed, some MFPs use off-the-shelf packages that might be found in any commercial bank. There are, however, a number of difficulties that arise when using these packages. Microfinance differs from traditional banking in a number of fundamental ways, with respect to products offered, clients served, the environment in which it operates, and the non-financial information that needs to be recorded and tracked. Many off-the-shelf software packages lack the functionality or flexibility to deal with these realities and requirements. This raises the need to either modify off-the-shelf software or develop in-house software, which assumes that the MFP has the internal capacity to develop and maintain software or the resources to outsource this work. More needs to be done to make standard and affordable MIS software accessible to smaller but expanding MFPs.

In the 'Microfinance and ICT Innovation' discussion, these MISs are not considered the most exciting innovation – indeed, they are hardly even referred to as innovative. They are, nevertheless, the most critical and fundamental aspect of an MFP's hi-tech infrastructure. Further ICT innovation, of the type discussed below, is not possible without a sophisticated and appropriate back-office MIS. With this understanding, it is now possible to explore opportunities to apply ICTs closer to the client interface, to create significant new efficiencies and allow MFPs to serve the hard-to-reach clients in more remote areas.

Mobile computing

While the back-office MIS enables the MFP to monitor its loan portfolio, this functionality is undermined if the data analysed by the MIS is not up-to-date or contains errors. With dispersed branch offices, paper-based transaction records and manual data entry, there can be a data delay of days and even weeks, and the possibility of introducing errors during the data entry process is high.

A recent innovation that serves to overcome these issues is mobile computing systems – palmtop computers that loan officers take to the field so that financial transactions can be recorded directly into the MIS, without the need for intermediary data entry at the branch office. The data entered in the palmtop computers is typically uploaded to the MIS at the end of the day, either directly in the branch office or via a remote communications link. Furthermore, the roll-out of wireless broadband infrastructure will enable these systems to be 'always online', resulting in true real-time data collection and monitoring of the loan portfolio at branch and institutional levels.

These mobile computing solutions also have significant implications with respect to data accuracy and integrity. Electronic data entry at field level, with on-the-spot, system-generated receipts for clients, significantly reduces data entry errors. Data accuracy is a fundamental requirement for any bank. An MFP will quickly lose credibility with its clients if errors are introduced during data entry, and 'client confidence' is of paramount importance to any bank.

The branch office franchise model

Serving new clients from remote locales is a key outreach challenge for MFPs. These locales include rural areas where the population density is low, the market is smaller and service provision is more expensive. MFPs find it difficult to serve these areas, especially when the overwhelming pressure is to reduce transaction costs and increase profit margins. One approach to meet this challenge is the 'branch office franchise model', where an MFP links with merchants in remote areas who have traditionally provided informal financial services. This is an extension of the mobile computing solution discussed above. These branch office franchisees manage transactions on behalf of the bank, and they receive an agreed payment for service on a per-transaction basis. Fees might be shared by the client and MFP, on the basis that the transaction costs would otherwise be significantly higher for both parties if the service were delivered by more traditional models. Transaction data is transferred electronically to the bank either in real-time or, for example, at end-of-day.

The key qualities of franchisees are that they are long-term businesses, respected and trusted in their communities, with computer skills and connectivity. A recent player in this mix, notably in India, are the rural telecentre networks that are particularly suited to serving as retail outlets for a distributed microfinance network, because of their innovation-business orientation and their familiarity with IT systems and telecommunications services.

Given that these (non-regulated) branch office franchises collect deposits as well as loan repayments, the model requires some consideration by financial-sector regulators.

Card services, EFTPOS[62] and ATMs

There are many similarities between consumer credit cards and microcredit services. Like microfinance methodologies, credit cards were introduced to reduce the high costs associated with small transaction lending. Common characteristics include unsecured credit for unspecified purposes,[63] small transactions, and pre-defined credit limits. Other salient features of credit cards, which many microfinance clients would like their providers to duplicate, include on-demand borrowing, a re-draw facility, and repayment flexibility within pre-defined guidelines. We know that microfinance clients desire these features because they continue to utilise local moneylenders for these very services where they are not provided by their MFP.

Given the similarities between consumer credit cards and microcredit services, the concept of a 'microcredit card' arises as a logical innovation. The introduction of card-based services also requires the roll-out of either EFTPOS (Electronic Fund Transfer at Point of Sale) functionality with third-party merchants (as per the branch office franchise model discussed above) and/or Automatic Teller Machines (ATMs). The former is probably the better solution for microfinance, because it facilitates immediate receipt for repayments and savings, which reduces the possibility of intermediary error or fraud. With ATM solutions, deposited repayments and savings are processed 'back at the office' and receipted later, a process which is unlikely to secure the confidence of clients. In either solution, withdrawal of credit or savings is equally straightforward.

The delivery of card-based microfinance offers even more opportunities. MFPs can implement microfinance-tuned credit-scoring algorithms, allowing clients who have proven their creditworthiness over time through successful repeat business to have their borrowing limit automatically increased, be given access to additional products and services, and be granted greater borrowing and repayment flexibility.

MFPs can also consider smart card technology as part of their 'microcredit card' solution. Smart cards have an embedded computer chip that can store client and transaction data, as well as process information.[64] Smart cards function as electronic passbooks, thereby reducing reliance on printed receipts. Because all relevant client data is stored on the card, MFPs can utilise EFTPOS systems and ATMs that do not need to be always on-line. This is a significant advantage in areas where telecommunications are unreliable and/or expensive. Finally, smart cards can be used in conjunction with biometric technologies (such as fingerprint scanners) to enhance the process of client identification, thereby enhancing privacy and data security.

Internet banking

Internet banking provides clients with real-time information about their accounts, and the ability to transfer funds between their accounts. It is an empowering tool because it gives bank clients the flexibility to manage their financial resources deliberately, at their own leisure, and without having to visit a bank office during opening hours. In particular, it is a vital accompaniment to card-based services, allowing clients to keep track of numerous small electronic transactions.

From the bank perspective, internet banking is an efficiency tool because it reduces the work of (human) tellers and therefore reduces labour costs. It is a relatively easy and inexpensive service to offer, and the incremental cost of having 1,000, 10,000, or 100,000 internet banking clients is negligible.

The main constraint to MFPs implementing internet banking is their clients' minimal access to internet. In some areas, this will be overcome somewhat with the roll-out of rural telecentre networks. It is also possible for MFPs to develop modified ATMs that provide this functionality.

Remittances: microfinance outreach to international labour migrants

For many developing countries, remittances by international labour migrants are larger than both official development aid and foreign direct investment. A challenge for development-finance planners is to tap into this flow of capital in a way that is empowering for the individuals and families involved, and which results in long-term economic improvement for themselves and their communities. There is an opportunity for MFPs, through technological innovation, product design, awareness-raising and facilitation, to extend outreach to these migrant workers and their families at home. Specifically, the following interventions are required:

1
Enabling policy and regulation that entices remitters to transfer their funds through formal channels rather than informal channels. This must include mechanisms for MFPs to be licensed as authorised recipients of international money transfers;

2
Technology solutions, international partnerships and associated business models that allow remitters to transfer their funds in a planned way, at regular intervals, in relatively small amounts, for reasonable cost, direct to the intended beneficiary (e.g. to a MFP-provided savings or loan account);

3
A cohesive strategy by MFPs to educate labour migrants of the range of financial products and services that is available to them;

4
A cohesive strategy by development planners to highlight options for long-term investment, especially microenterprise investment.

In terms of technology solutions, MFPs need to develop their own electronic transfer capabilities to eliminate the cost of the 'electronic middlemen' that currently provide this service. An example is Sri Lanka's Hatton National Bank, whose 'HNB Easy Remittance' system has been implemented with currency dealers throughout the Middle East, enabling Sri Lankan migrant workers to remit funds directly to HNB accounts, including microfinance accounts, for a small percentage of the price offered by other funds transfer providers.

Conclusion

All of the above examples of ICT innovation in microfinance are being trialled or implemented in various MFPs around the world. However, they are yet to become widespread. There is much to learn and more experimentation to take place. Nevertheless, the microfinance sector stands at a junction point, where its business models and processes are going to be challenged by these innovations.

The are many constraints to the roll-out of ICT-enabled banking systems. First, all of the usual digital divide issues apply: ICT regulatory regimes that hinder rather than enable innovation, non-existent, unreliable or high-cost ICT infrastructure, and the lack of human capacities needed to fully engage with the ICT applications. Second, there are challenges from the microfinance perspective as well: financial sector regulation that restricts innovation, technical capacities of MFPs to manage the design, roll-out and maintenance of ICT systems, and managerial capacities of MFPs to manage the necessary changes in business processes that will accompany the ICT innovations.

One observation that urges caution is that some ICT-enabled services, especially card-based services, tend to depersonalise and individualise the banking process and isolate the client from his/her peers. This conflicts with those group-based methodologies that are held up as the key reason for the high-repayment rates that are typical in the microfinance business. This concern cannot stop the transition to electronic services, but it is something that will need to be monitored closely.

Some people will say “It can’t be done in microfinance. Electronic banking for the poor will not work”. To this attitude, we can reply with two salient points. First, it *has* to work, because economies and enterprises that have embraced electronic banking and commerce will find it increasingly difficult to do business with those that have not, leaving the latter at a continuing disadvantage. Second, we do well to remember that more than 20 years ago when microfinance was in its infancy, there were many who said “The poor cannot repay, the poor will not repay, the poor cannot save.” On all counts they have been proven completely wrong. Perhaps the same will be the case with e-microfinance.

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Footnotes

1
http://www.un.org/summit2005/presskit/fact_sheet.pdf

2
A selection of ICT4D activities has been compiled in the WSIS stocktaking http://www.itu.int/wsis/stocktaking/scripts/search.asp

3
www.globalknowledge.org/ict4d pages 11ff or Weigel, G. and Waldburger, D. (2004) 'ICT4D Today – Connecting People for a Better World. Lessons, Innovations and Perspectives of Information and Communication Technologies in Development'. Published by SDC / GKP. Berne, Switzerland

4
SDC/MSSRF (2005), 'Up-scaling Pro-Poor ICT-Policies & Practices. A review of experiences emphasising low income Asian countries and Sub-Saharan Africa'. By R. Gerster and S. Zimmermann. Berne, Switzerland http://www.deza.admin.ch/ressources/deza_product_en_1514.pdf

5
See above, Note 4.

6
Mission 2007: http://www.mssrf.org/special_programmes/mission_2007_NA/namain.htm

7
This chapter is based on the conclusions of a workshop held in Geneva, Sept 14th-15th 2005, with the participation of Subbiah Arunachalam (MSSRF), Geraldine Kouadio (SDC), Stijn van der Krogt (IICD), Radhika Lal (UNDP), Stuart Mathison (FDC), Edwin Rocha (Instituto de Capacitacion del Oriente, Bolivia) Basheerhamad Shadrach (OneWorld South Asia), Sergio Toro (Agencia para el Desarrollo de la Sociedad de Informacion en Bolivia), Kitty Warnock (Panos), and Gerolf Weigel (SDC)

8
See InfoDev Report (2005). According to the TOR for the study: "Anecdotal evidence from West Africa thus far indicates that SAT-3 has had a negligible impact on improving broadband access or lowering prices as most customers continue to rely on satellite for international connectivity. The emergence of 'club deals' is in part due to the lack of proven open access models that offer economically viable alternatives and leverage existing regional networks."

9
See for example, Gerster, Richard and Sonja Zimmermann (2005), Gerolf Weigel (this volume) and Stijn van der Krogt (2003, 2005)

10
For example, see an article 'The Real Digital Divide' in *The Economist*, March 10, 2005

11
While access to ICT, particularly mobile telephony has been expanding rapidly, in the case of Africa which has seen very high growth rates, at the end of 2003, it was estimated that less than half of Sub-Saharan Africa was covered by a mobile cellular signal (see ITU, Africa 2004 Special Report: Mobile Africa). The ITU currently estimates that 800,000 villages, 30% of all villages worldwide, still lack even a basic telephony service. ITU, Press Release, June 16th 2005

12
For a brief on Universal Access Funds & related issues, see World Bank (2005a)

13
Again, see InfoDev Report (2005). It is argued that "…It sees the challenge as being able to extend communications to those at the bottom of the income pyramid by lowering the cost of services. In these situations the function of the public sector is to create the circumstances for successful Open Access (through partly funding infrastructure) and to incentivise the roll-out of services as widely as possible." Also see APC (2005)

14
Please see http://www.freepress.net/news/6124 and http://apts.gov.in/apbroadbandnetwork.html. Many thanks to Parminder of IT4Change for pointing this out.

15
Community-driven infrastructure refers to the idea that the primary goal is to serve the development needs of the community, and can bring together, for instance, local private sector/entrepreneur, community owned cooperatives and local government provision. See Mary Beaton BUTE-UNESCO (2003). There is also emerging interest in the role of community-based cooperatives. See Report on Community Networks produced by Sean O Siochru and Bruce Girard for UNDP

16
See Mission 2007 India http://www.mission2007.org/

17
For the focus and role in achieving the goals outlined in the Millennium Declaration, see WSIS plan of action: "4. The objectives of the Plan of Action are to build an inclusive Information Society; to put the potential of knowledge and ICTs at the service of development; to promote the use of information and knowledge for the achievement of internationally agreed development goals, including those contained in the Millennium Declaration..." page 1

18
See Nishimoto and Lal (2005) and UN Millennium Project (2005)

19
See APDIP (2005) and references for note 12 above

20
e.g. see UN Millennium Project (2005)

21
Millennium Project (2005)

22
The poor not only lack access to information but also pay relatively higher costs for all services – e.g. interest rates of up to 1,000–2,000 percent per annum. Further, many countries have actually seen a reduction of financial facilities serving rural areas. ICT can contribute to redressing this issue and expand access to microfinance and banking services at much more affordable rates. See http://www.digitaldividend.org/pubs/pubs_05_overview_microfinance.htm

23
This is true even for 'domestic' industries such as milk production where poor women are actively engaged as producers in many developing countries. See The Digital Dividends case study and Namrata Bali

24
See OECD (2003) and James Deane & Souter (2005)

25
For an example of a particularly participatory process see Bolivia, e-TIC http://www.etic.bo/webportal/

26
TIC para el desarrollo, COSUDE, La Paz, Bolivia, 2005

27
See Up-scaling ICT for poverty reduction – experiences in Asia and Africa, SDC/MRSSF, 2005

28
Based on evaluations of 15 projects implemented since 2000 in Bolivia by TiCBolivia with support of IICD, SDC, DANIDA, DfID, HIVOS and CORDAID, Annual Report Monitoring and Evaluation 2004, TiCBolivia/IICD, 2005

29
Regional and global initiatives influencing the integration of ICT in development include, amongst others: Free Trade Agreement for the Americas; World Summit on the Information Society; CAN; MERCOSUR; CAFTA and the UNESCO Convention of Cultural Diversity

30
Existing information exchange networks in ICT include for example InfoDesarrollo in Ecuador (www.infodesarrollo.org) and TiCBolivia in Bolivia (www.ticbolivia.net)

31
Batchelor 2003

32
Beardon sees this also as a weakness of the bottom-up process: "There is an inevitable reliance on committed people with integrity to ensure that the participatory process is properly followed." (Beardon 2004, p. 20)

33
Hagen 2004

34
Jayaweera 2004

35
Pena in: UNDP/APDIP 2003

36
Slater/Tacchi (B) 2004; Jayaweera 2004

37
Greener 2004

38
Curtain 2004

39
Gerster in: Weigel/Waldburger

40
Swaminathan in: Weigel/Waldburger 2004, p. 209. See also UNESCO (A) 2004

41
Swaminathan in: Weigel/Waldburger 2004

42
Beardon shows that the information needs of three communities in Uganda and Burundi are quite different and influenced by their surroundings (such as continuous conflict in Burundi). Furthermore the needs differ depending on gender and age (Beardon 2004)

43
Gerster in: Weigel/Waldburger 2004

44
Arunachalam 2004

45
2003 (B); Mathison, 2003

46
The example of Bhutan is well analysed in Faris 2004

47
ITU/WSIS 2004

48
Drake 2004

49
"While there are only two [fixed] telephone lines for every hundred people in Africa, there are twenty radio receivers per hundred." Bruce Girard, in The One to Watch: Radio, new ICTs and interactivity – ed. B Girard (FAO, 2003)

50
Why Radio Matters, Panos London, 2003 – http://www.panos.org.uk/files/WhyRadioMatters.pdf

51
For example, The One to Watch – ed. Girard, FAO 2003.

52
Specifically: email, internet, minidisk recorders, broadcast-quality microphones, digital audio editing, and word processing. Several broadcasters told us that electricity and air-conditioning would also go a long way to keeping the station on air. Others mentioned that even a bicycle to travel round the villages would be a valuable piece of technology.

53
Up In The Air: the state of broadcasting in Eastern Africa, ed. Lynne Muthoni Wanyeki (2000); Up In The Air: the state of broadcasting in Southern Africa, ed. Aida Opoku-Mensah (1998); CATIA project radio station audits in Kenya, Ethiopia, Uganda, Zambia (2003).

54
See http://www.catia.ws for details.

55
For details of the first Broadcasters' Forum held in Ethiopia, please see: http://panos.org.uk/global/Rprojectdetails.asp?ProjectID=1026&ID=1002&RProjectID=1073

56
For examples of fellowships awarded to stations in Uganda and Ethiopia, see: http://panos.org.uk/global/Rprojectdetails.asp?ProjectID=1026&ID=1002&RProjectID=1074

57
For example, AMARC Africa's Community Radio Development Fund, which seeks to "provide critical short-term support for long-term impact", by providing equipment to radio stations that the stations themselves have requested.

58
In English-speaking, developed country contexts, these applications have been referred to as 'killer applications'.

59
Throughout this paper the author refers to 'Microfinance Providers' (MFPs) rather than the more common 'Microfinance Institutions' (MFIs). Increasingly, commercial banks in developing countries are providing microfinance either directly through in-house programs or indirectly through partners. 'MFI' generally refers to stand-alone microfinance providers, and tends to be exclusive of alternative models for delivering microfinance that are emerging.

60
In Bangladesh, for example, a number of MFPs – ASA, BRAC, Grameen and Proshika – each have in excess of one million clients, and their combined number of clients is around 10 million.

61
Financial sustainability for an MFP means that it is generating enough revenue from interest charges and fees to cover all direct and indirect costs, including operating expenses, provision for loan losses, and adjusted cost of capital. (The adjusted cost of capital refers to the cost of maintaining the value of the institution's equity relative to inflation and the cost of accessing commercial funding rather than concessional loans).

62
EFTPOS – Electronic Fund Transfer at Point of Sale

63
These days, MFPs rarely hold to the claim that their lending is purely for micro-enterprise development

64
Some smart cards have a memory chip only, others have memory and a microprocessor

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in cooperation with:

Swiss Agency for Development and Cooperation
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and in association with:

Foundation for Development Cooperation
www.fdc.org.au

International Institute for Communication and Development
www.iicd.org

MS Swaminathan Research Foundation
www.mssrf.org

United Nations Development Programme
www.undp.org

Designed by:
John F McGill
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