A Dialogue on ICTs and Poverty: The Harvard Forum

In September, Canada's International Development Research Centre invited 30 people from around the world to discuss Information and Communication Technologies and Poverty Reduction. The meeting took place on the campus of Harvard University in Cambridge Mass. The participants included members of the Harvard faculty, educators, academics, and engineers from developing countries, and Nobel prize winning economists. Their objectives were:

- to discuss the connections between diffusion of ICTs, and poverty, in developing countries of different kinds;
- to consider ways which ICT policies, management and investments can be more effective for poverty reduction;
- to consider priority areas for action and research, for increasing the contribution of ICTs to poverty reduction.

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

On the urgency of ICT access for poverty reduction

Lincoln Chen: There is a seismic change that is taking place.
Amartya Sen: The availability and the use of this technology is no longer optional.
Noeleen Heyzer: Information technology can become a tool of either decreasing the inequalities that already exist in the world or increasing it.
Perez: We have to rethink everything from scratch.
Alison Gillwald: We cannot fiddle around the edges any longer. We need some sort of dramatic solution, some quantum leap.
Keith Bezanson: Can we wait? The answer is clearly no.
F. F. Tusubira: The mobile phone was for a very long time in the West seen as a tool for the rich. In our countries it is a day-to-day instrument of survival even among the poorest communities.
Amartya Sen: If you agree with the view that the opportunity is just enormous, but we have to see how the opportunities are divided and how rather than reinforcing inequality across class, gender, and regional barriers, it has the effect of reducing these gaps and indeed make the least well off people benefit most, you have to do something about it.
Michael Spence: Remember, you have the cost reductions driving forces in the technology working all the time in your favour. So things that look very expensive now to implement on a large scale may not look so daunting later one. On this platform, and this is a steady historical process, the number of buyers and sellers who can find each other without reference to the transaction costs associated with region and so on, is much, much larger and so the markets are larger, the boundaries move out, the liquidity in the markets gets greater, and at some level, this is the platform on which the idea of a kind of global economy actually turns into a reality.

On the importance of ICT governance and regulatory reform

Onno Purbo: Liberalization of the regulation is the major barrier right now in Indonesia. We basically steal the frequencies... liberating is what I mean. Education of the society can be done self-financially, they can do the education using their own money, but liberalization of the regulation is the major barrier.
Michael Spence. It is clear that the proper regulation of telecommunications is absolutely critical. You can have all the infrastructure you want, but I think we probably could all walk out the room

saying, that if that problem in a particular country can't be fixed then something is broken that is critical and it's very hard to see how you can get to the rest of the benefits.
Alison Gillwald. If one looks at Africa the costs of access to ICTs will simply mean that there will never be ICT diffusion as it currently is. There is certainly a clearness that privatization on is own has not been a successful strategy... the lack of effective regulation, to give an extended private monopoly, has actually done many of our countries a great disservice.
Jim Moore. ICT technologies have become fundamental infrastructure for doing business in this new economy. For example, undersea fiber connections for each country are the equivalent of deep-water ports. And so you wouldn't have a lot of argument over whether a country should have deep-water ports for shipping goods... it's become so fundamental we don't even have a category for it.

On Social Entrepreneurs; services and content for the poor

Muhammad Yunus: The quickest way to get out of poverty right now is to have one mobile telephone, and you will see how quickly she is changing her life. Come back in two years and you will not recognize what she was before.
Onno Purbo: It's a movement. The whole society moves towards the knowledge based society without any funding from the government, without any funding from the World Bank, without funding from IMF... what I'm hoping I can see 200 million Indonesians can survive using their own mind. Not survive using their own muscles. Not depend on their muscles. Use their mind. That's the success criteria I am having.
F. F. Tusubira: The common mistake is that we think it is the ICT that is the objective.. Once you look beyond that, we find that real benefits can now grow and very fast too.. I don't know if I can quantify that fully. But if you take simple things like people establishing the prices of their food products around the country, which they can do nowadays through simple messaging, to me, that is very fast.
M. S. Swaminathan: I would give great emphasis to research and development of content creation which can make a difference to the life of the poor, in economic terms, in livelihood terms.. if you really want new technologies to benefit the poor, we must work on what content of the communication, what do you want to communicate to them which makes a difference to their day-to-day life

On the need for ICT alliances for gender equality, education, health, democracy

Amartya Sen: ICT could get into a much more successful mode if it tries to form alliances with political agitators and public reason advocates, the basic education people and the gender expansion thing... that's the direction I would suggest.
Noeleen Heyzer: Information technology can become a tool of either decreasing the inequalities that already exist in the world or increasing it. And these inequalities include inequalities along the lines of human rights and inclusion. These inequalities include the whole issue of class, of language, of the North South divide, and increasingly of gender.
Nancy Spence: One of the lessons we have learned is that when you do invest in women there are these tremendous knock-on effects, so that the impacts go directly both into the family, they go into education and they go into health and nutrition and children, and they go into the community.
Marty Chen: There is another form of connectivity collective that is being generated which is actually grass roots international movements. One example is there is an international grassroots alliance of all the home based workers organization around the world for the industrial outworkers, and 80 to 90 percent of them are women and they're really trying to deal with the transformation in the workplace.

Noeleen Heyzer: The content, to ensure that in a knowledge-based economy and increasingly a knowledge-based international setup; we need to ensure that the knowledge of women are used in the content of what is being designed in the technology.
Michael Spence: The internet is not an alternative or a superior was of delivering education, it's an input.
Clothilde Fonseca: These technologies are certainly tremendously empowering for children. They really develop wonderful sense of self efficacy. They develop a sense they can have a future. They have to do with the development of the individual in a more integral way, in developing the individual's capacity and the community's capacities.
Lincoln Chen: It's quite clear that ICTs - and here "T" is important – will be revolutionary in terms of health, there's just no question about it. I think in my note, what I was not skeptical about, but what I was unclear about was the equity of that health distributive element and whether the poor will be able to harness this technologic capability for their health production.
Jim Moore: We really are building larger and larger communities and so I've lately started to think about this is kind of the civic layer of the web... And if you want to take it a little wildly, it's the layer where we build [a] collective mind around the globe.

On donors

Ichiro Tambo: All the ICT advisors. Within donor agencies face two big challenges. One is inertia within the organization. Second is skepticism of technologies.
Venancio Massingue: I did not understand. What do you think is the reason for inertia and skeptics, personally.
Ichiro Tambo: Well personally, the donor community is very conservative and we are afraid of failure.

Follow Up

IDRC is pursuing initiatives, and the challenge of helping create global coalitions, in the areas of ICT governance and regulation, social entrepreneurs and the services and content they provide to the poor, and ICT alliances with existing coalitions in education, health, gender equality and democracy. Existing initiatives are on the IDRC website, www.idrc.ca, and documentation on new initiatives is available on request.

Grameen Ladies

The meeting was also attended by a Bangladeshi banker, who is committed to using ICT tools to eliminate poverty. His name is Muhammad Yunus, President of the Grameen Bank. Last year the Grameen Bank loaned almost $500 million U.S. dollars to poor people in Bangladesh; 95% of the borrowers are women. Muhammad Yunus' bank has gone from loaning poor women money to buy chickens and cows to financing the largest mobile telephone company in the region. That story begins in the mid 1990's when the Bangladesh government invited applications for mobile phone licenses.

Muhammad Yunus: We applied for a license for mobile phones. And in the government everybody was curious… they thought we are pulling legs. You are a bank for the poor people. You give $50, $100, $200 loans. You have no idea what a mobile phone company is about… how much money it needs. Why do you do that? It totally irritated everyone around to have mobile phones go in the hands of poor women. People kept asking, who would she call? Well, we said she is not going to call anybody. She is going to sell the services of the telephone to the people who need to use telephones.

And people kept asking, well she is illiterate, she wouldn't even know to push those buttons and dial a number and so on. So I said, there are only ten numbers in the world. If you try hard you cannot invent another one… an 11th number. So if this pushing these numbers can bring income… money, I think she will learn it in ten minutes. That is not a big deal… learning those numbers.

About five or six months later I was going around in the villages talking to the women who got this new telephone about how they were doing. They were all delighted, excited about the phone. Everybody has a phone in her hand when we're talking about it. At the middle of the discussion I said, do you have any problem in pushing those buttons to dial a number? Everyone said, no we don't have any problems. We can do that. So one woman stood up and said why don't you give me a number and blindfold me and if I fail to dial it the first time I will return your telephone. I don't need a telephone. I was stunned. I was stunned because I wish all those people who doubted in the ability of these women were there.

These women never saw a telephone in their life. Many of these women never saw electricity in their life. 80% of the people in Bangladesh have no access to electricity today. So, one of the first problems we faced is how do you bring mobile phones to villages where there is no electricity. So we resolved it immediately with a very simple solution. . .bring solar panel. So, our telephones look a little different. They are all connected with solar panels to the battery of the telephone But, it works.

Now we have more than 30,000 telephone ladies providing the service and not only are they providing the service, the amazing thing is the income they earn from this service. Minimum income is $50 a month net profit and it goes all the way to $500 per month. Imagine in a country with an average **annual** per capita income less than $400, a woman with a mobile telephone earning $500 a month by just making this service available.

These telephones are internet enabled telephones, and unfortunately we have not developed the content of the internet yet so that service remains unutilized, but the moment content is developed and people find service of it, I'm sure these 30,000 telephone ladies will become internet ladies in no time.

The quickest way to get out of poverty right now is to have one mobile telephone.

Information and Communications Technologies (ICTs) for Poverty Reduction: When, Where and How?

Gathering technology, poverty, gender, social, market and economic dynamics

September 19-20, 2003, Faculty Club, Harvard University

Objectives:

- to discuss the connections between diffusion of ICTs, and poverty, in developing countries of different kinds;
- to consider ways which ICT policies, management and investments can be more effective for poverty reduction;
- to consider priority areas for action and research, for increasing the contribution of ICTs to poverty reduction.

PROGRAM

Friday September 19

12:30-14:00	Lunch for participants
14:00-15:30	*Session 1:* ***Your counsel***
	Welcome: Maureen O'Neil, IDRC President and Dwight Perkins, Asia Centre Director, Harvard University
	Summary of short messages provided in advance by participants: Michael Spence and Muhammad Yunus
	Views from the South: Chair: Rohinton Medhora M. S. Swaminathan, Onno Purbo, Frederick Tusubira, Clotilde Fonseca, Swapna Mukhopadhyay, Tadao Takahashi, Sudhir Anand, Carlota Perez
15:30-16:00	Refreshment break
16:00-17:30	Views from the South, continued: Chair: Richard Fuchs Open Discussion
19:00	Reception and dinner

Saturday September 20

09:00-10:30	*Session 2:* ***ICT for Poverty Reduction (ICT4P): priorities for action***
	Moderator: Amartya Sen
	Perspectives: Muhammad Yunus, Noeleen Heyzer, Venancio Massingue, Richard Simpson, Tadao Takahashi, Stephen Browne, Onno Purbo, Tim Evans, Nancy Spence, Graham Todd Open floor; interventions and discussion
10:30-11:00	Refreshment break
11:00-12:30	Completion of *Session 2:* Chair: Randy Spence
12:30-14:00	Lunch for participants
14:00-15:30	*Session 3:* ***ICT4P: what don't we know?***
	Moderator: Michael Spence
	Perspectives: Frederick Tusubira, Keith Bezanson, Swapna Mukhopadhyay, Lincoln Chen, Jim Moore, Alison Gillwald, Ichiro Tambo, M. S. Swaminathan, Martha Chen, David Dickson
	Open floor: Interventions and discussion
15:30-16:00	Refreshment break
16:00-17:30	*Session 4:* ***Collecting thoughts - Finding Consensus***
	Moderators: Amartya Sen, Michael Spence, Ed Clark, Rohinton Medhora Interventions, consolidated views, messages…
19:00	Dinner for participants

Information and Communications Technologies (ICTs) for Poverty Reduction: When, Where and How?
Background Paper: Discussion, Research, Collaboration

Executive Summary

Framework and evidence

Information and Communications Technologies (ICTs), including the Internet, are generating changes in markets, private and public sectors and economies in the more and less developed world. Some 'sectoral' changes are very large (business services, education) while others are to date small. But they are present and advancing in every area of economic, social and political activity. This paper starts with economic perspectives on poverty and poverty reduction - on the one hand - and on ICTs as technologies, and the very special characteristics of these technologies, which shape their impact on development and poverty reduction. For example, including the networking possibilities they enable, ICTs (massively) reduce transactions costs, change the structure of markets and of public services and institutions, integrate global and local markets, untrap human resources, and immediately increase the potential values of human capital. They further embody enormous knowledge and can serve to empower (and manipulate) people at community and national levels.

There has been a large wave of investment over the past decade in ICT for development (ICT4D), and some significant part of this has been aimed at poor people (ICT4P) - both in terms of bringing ICT access poor communities, and in using ICTs in many other ways which support poverty reduction. There have been ***many*** successes, lessons learned and experience documented. This paper draws on experience from developed and developing countries to survey cases material pertaining to ICT4D and ICT4P, and draw out some analysis and conclusions, for purposes of discussion.

Along these lines, the experiences of groups of countries are surveyed, using a wide base of material from the Internet and online journal access. For the OECD and rapidly changing developing countries - principally Korea, Taiwan, Hong Kong, Singapore, Malaysia, Brazil, India, Mexico, Turkey - country cases are profiled. For an intermediate group - Mongolia, Philippines, South Africa, China, Vietnam - there is also enough material to profile country experiences. (Some also are promoting software industries with success - Bangladesh, Indonesia, Ukraine, Iran, Vietnam, China, Philippines, Russia). For less advanced developing countries, lacking concerted overall ICT game plans, material is abundant, but it is mostly sector and application specific, and so is surveyed at length under these 9 headings:

1. multipurpose community access;
2. access technologies amenable to poverty reduction;
3. gender equality;
4. education and human resource development;
5. science, high-tech and ICT-sector growth;
6. business and livelihoods development and support:
7. public sector, services & poverty management
8. environmental and natural resource management;
9. transparency, accountability, empowerment

This experience offers a lot of insight and value, though it is difficult to consistently maintain focus on poverty, and separate poverty reduction from broader economic development insights. In this context, based on introductory chapters on ICTs and poverty, and current development thinking, this paper takes the view that growth and development are necessary but not sufficient for poverty reduction, and that pro-poor strategies and investments are as important for ICT and knowledge-economy strategy as for other connected areas of social and economic development.

Observations: OECD and rapidly changing developing countries

Successes generally occurred in productivity, growth and poverty reduction, with ICTs contributing strongly. Liberalization and opening of ICT sectors was important in almost all cases. Strategic government intervention and support were also both generally essential and culturally/politically/socially specific. Countries whose 'vision' included social as well as commercial development have often generated a dramatic growth **and** equity dynamic. Poverty levels in most of these countries were low initially, and poverty reduction an explicit component of ICT strategy for only a few, but broad social inclusion and 'buy-in' has characterized many. Culturally and politically specific factors were central to the intensity and form of the strategy, with some real trade-off between economic competition (liberalization) and political control. Education and technical skills were either preconditions or strong co-investment areas for these countries, which are mostly cases of major economic/social reform and restructuring. Both a national ICT/knowledge economy game plan and intensive ICT infrastructure investment were essential, and there are valuable insights in each case on how different approaches and institutions were used for social development and poverty reduction. It is also worth noting that, as with other major technology revolutions (steam, electricity, combustion.. biotech..), initial effects were also disruptive, and created a major change in the structure of economies. Structural adjustment included initial negative impacts, like labour displacement, and differential initial access to ICTs (digital divide) contributed often to some initial decline in distributional equity. As access spread in business, public services and households, the positive economic potential of ICTs prevailed in terms of GDP, but results for equity and poverty reduction depended on the nature and extent of socio-economic policy and action in each country.

Observations: less advanced developing countries

Diffusion of ICTs directly to (poorer) communities has been happening intensively for about a decade, mostly via hundreds going on thousands of specific initiatives, led by communities, development, donor and business organizations. In addition, and particularly in the past 5 years, ICTs have been applied to systemic improvements important to poverty reduction (eg, from the list above, education, health and social services delivery, broader government transparency and accountability, and helping empower citizens and build social organization around rights and gender equality). Evidence on both pro-poor ICT access and use (bottom up) and systemic (top down) approaches is mostly in the form of a flood of case material - surveyed in this paper - and thus inevitably interpretative for drawing conclusions. Subject to this caution…

Pro-poor access and utilization

There is a lot of very positive experience in connectivity and use in poorer communities. Effective usage includes e-commerce and market information services, education, health/health-education, gender empowerment, social and political empowerment, and combinations of these in multi-purpose community access investments. Poor communities in most of the world are increasingly aware of the potential of ICTs and, with some help, keen to adopt ICTs and help other communities do so. Clearly, poverty will not be eradicated ***by*** ICTs - and for many poor populations, more basic needs may take precedence. But equally, poverty will not be eradicated without these technologies, and failure to maximize their potential for poverty reduction, in this PRSP/MDG era, would be incongruous. The positive dynamic often created by ICTs and the commitment of their beneficiaries and supporting groups, appear highly valuable to global poverty reduction objectives, and it is hard to see poverty reduction succeeding if a large part of humanity is excluded from the knowledge shared by everyone else. What is done today for ICT4P will also be critical for newer technology revolutions, notably biotechnology, whose essence is linked inextricably with informatics, and whose and management and benefits will be highly intensive in knowledge, networking and widespread ICT literacy.

The challenges of pro-poor ICT access and utilization are as substantial as their potential. Diffusion is very intensive in effort and local knowledge, literacy and skills development etc, as well as technical capability and effort. Broad approaches, like that of Grameen (large-scale microfinance first, ICTs in combination), are very appealing in their scale, early/quick financial viability, social development dimensions, scope and vision. More familiar in less advanced developing countries are many individual pro-poor access pilots in the context of fairly erratic development of markets, national and local governments, public services, ICT infrastructure, telematics sectors, micro finance, community development capacity etc. 'Scaling up' pro-poor access and utilization faces challenges in all of the following areas:

- *technology*.. Land lines and computers, the 'desktop model', has been prevalent in multipurpose community access (telecenters, schools..) but is typically slow and/or expensive to extend to poor communities. And - although there are many examples of rapid financial sustainability - these investments often require extended subsidy. There are cases for subsidy (below) but clearly, ongoing development of low-cost technologies will be one key to ICT4P. Currently, Wi-Fi (broadband Internet, by radio frequency) is showing success for low-cost broadband 'last mile' connectivity in densely populated areas. And wireless mobile/PDA text messaging is spreading in a range of countries and commercial and public service uses. Research, development and piloting of low-cost technologies amenable to poor communities needs ongoing support, particularly via ICT4D social and commercial entrepreneurs

- *community development capacity*.. Widespread ICT diffusion in poor communities will need in most countries a large scaling up of community development people and organizations which are ICT-smart and connected with technical support. Expansion of community development training in educational and on-the-job programs would appear a key investment for poverty-reduction generally, in most countries, including pro-poor ICT access and utilization.

- *national policy and infrastructure*[1].. Pro-poor access initiatives can move ahead of, and create demand for, the many components of national ICT infrastructure, but widespread pro-poor access over time is dependent in many ways on these components, as elaborated below.

Systemic changes contributing to poverty reduction

Experience with the more top down approaches to ICT4P has also been mostly very positive - for example in general e-government applications (improving basic functioning, transparency and accountability of governments), in distance education applications, in health system management and responsive to needs, in economic management, in poverty monitoring and reduction programs, in environment and natural resource management etc. etc. Priorities in each country depend basically on what are the most binding constraints to development and poverty reduction. Experience of more and less advanced countries underlines the importance of attention to ICT infrastructure, and more specifically..

- *game plan, policy and regulatory regime*.. Countries need ICT and knowledge economy game plans, however basic, and these need to be integrated with overall socio-economic development strategies and with poverty reduction strategies. Policy and regulatory regimes which support the development of both market and social ICT investment are key. Liberalization and private market expansion have been central to successful countries, but so have public support and investment. Social inclusion, equity and poverty reduction have been important components of most successful ICT/knowledge economy strategies. Knowledge and technical assistance in ICT policy and regulation is plentiful, but there is a need to further synthesize and make easily available the central models and features of ICT4D policy/regulation, and the special elements most important to ICT4P.

- *telecommunications and connectivity infrastructure*.. Government investment support for ICT infrastructure (but generally not managing it) has been an essential ingredient in developed and rapidly advancing ICT-oriented developing countries. A primary case for this is that of collective consumption (public goods elements of connectivity infrastructure), and thus of economic efficiency. Regardless of the case for public support, however, poorest country governments lack a sufficient revenue base for investment - even though experience indicates that, with competition and reasonable public management,

[1] Both 'physical/technical' infrastructure:
- policy/regulatory regimes, technical supplier/provider industries, hardware and software/applications
and knowledge and networking infrastructure
- content providers and content, knowledge networks/networking, attitudes and technical capacity of users - ICT literacy

connectivity costs can decline quite rapidly. International development cooperation, currently focused so much on poverty reduction, could valuably take up the government-to-government task of ICT infrastructure development - on both efficiency and equity (poverty reduction) grounds - and further building of effective country and sector approaches needs global and country-by-country attention. The pro-poor areas of connectivity infrastructure, like Wi-Fi and wireless/mobile/PDA, increasingly need specialized attention from governments and bilateral donors in ICT and poverty reduction strategies.

- *application and content*.. Aside from international content of the Internet, an enormous resource, the application and content for all domestic ICT applications comes from a full range of institutions in a country - government, educational, private (telematics sector), NGO, gender, development and community organizations etc - and the engagement of each needs building and investment as part of national strategies and donor support. In many countries, improvements in public sector functioning are key, and there are many e-government platforms available internationally at low cost, and with support for adapting and implementing. ICT and e-government supported improvements in economic and budget management, government accountability, social services (especially health and education) targeting and delivery, poverty monitoring etc are well developed and merit concerted attention and investment, given the cost of public sector weaknesses or failures.

Suggestions

Accelerated pro-poor access and utilization

A next step for the ICT4D community, (operating responsively and largely outside developing country governments, supported by multilateral and bilateral donors outside bilateral government-to-government channels), would be to consolidate the successful experience and lessons of the past decade of 'research venture capital', and intensify efforts to bring ICT access and beneficial uses to poor communities. More specifically, with the focus of donor support on poverty reduction, it is suggested that global ICT4D fora, including the forthcoming World Summit on the Information Society (WSIS) develop an explicit ICT4P platform which includes concerted efforts on:

- support for low-cost technology development and application, aimed at poor-community access;
- support for improvement and scaling up of key applications and services for poor communities - within countries and internationally:
  - bringing together essential partners, eg organizations specialized in development and community organization, gender equality, education, economic development and poverty reduction..
  - funding well conceived initiatives at a scale much larger than current ICT4D pro-poor access initiatives;
- support for some leading-edge ICT-pro-poor initiatives in areas of global focus re poverty reduction, eg girl's primary education (aimed at girls but not excluding boys), where there are active global consortia.

Systemic poverty reduction improvements

At the same time, the effectiveness of governments and bilateral government-to-government cooperation in ICT4P investment could evidently be improved by co-ordinated country initiatives, for poorer/poorest developing countries, which included:

- elaboration of ICT and knowledge economy game plans, integrated with overall development and poverty reduction strategies, and the policy and regulatory regimes needed;
- elaboration of ICT application in government services strategies, notably education, health, macroeconomic and budget management, gender equality and poverty monitoring;
- support for the implementation of these strategies, once elaborated, including long-term support for the public goods component of ICT infrastructure development

ICT4P Research Support Program

Both of the initiatives above would need research support including:

- more, more frequent and better synthesis of technical knowledge, and lessons/good practices, including country by country ICT4D/ICT4P reviews across sector and issue areas;
- research support for connecting and building coalitions among ICT, community development, gender, livelihoods, education, health etc oriented organizations internationally and within countries;
- more synthesis of experience on the integration of ICT and knowledge-economy strategies with poverty reduction and overall development strategies;
- microeconomic analysis and evidence on the main ICT-centred and supported applications which are central to both the private and the public-services sectors important to poverty reduction.