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**THE CONTRIBUTION OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTs) TO
ACHIEVING THE MILLENNIUM DEVELOPMENT GOALS (MDGs).**

This document is submitted FOR INFORMATION to the POVNET meeting to be held on 4-5 November 2004.

It is also submitted as BACKGROUND document for the ICTs and Poverty Reduction discussion session at the POVNET Infrastructure for Poverty Reduction (InfraPoor) Task Team workshop to be held on 27-29 October 2004 in Berlin, Germany.

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THE CONTRIBUTION OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTS) TO ACHIEVING THE MILLENNIUM DEVELOPMENT GOALS (MDGs)

Introduction

1. The Millennium Development Goals (MDGs) are an outcome expression of the global fight against poverty. The outcomes are based on a pro-poor enabling environment, which includes pro-poor economic growth, the delivery of services to the poor, and the responses of the poor in terms of livelihoods. The analysis of the latter can be expressed in terms of market based pro-poor growth, sustainable livelihoods, resource distribution including social assets or a rights based analysis. The fight to fulfil the MDGs is not an MDG by MDG fight nor even a sector by sector fight. Poverty is multidimensional, and our solutions also have to be multidimensional.

2. Information and Communication Technologies (ICTs) are such a case in point. For example, the advent of a telecommunication system which reaches to poor rural regions, is a mechanism by which the market may change potentially in favour of the rural poor (MDG1), is a mechanism for supporting teachers in isolated schools (MDG2), is an opportunity for women to start businesses they may not otherwise have been able to (MDG3) and for supporting health workers in isolated clinics (MDG4,5,6).

3. The link between ICTs and MDGs is currently a key subject for debate. This paper has drawn on a number of recent works including OECD/DAC (2004), GICT (2003), plans of UNICT Task force, among others. Many agencies are now focusing attention on the linkages between investment in ICTs and fulfilling the MDGs, and after many years of pilot projects the focus of ICT interventions seems to be in mainstreaming strategies. Given the number of recent papers, what is distinctive about this paper? This paper seeks to draw out the key messages from recent work, with due regard to the degree of confidence we have in those messages, and provide a challenging basis for discussion among donors on how best to take this work forward in an effective and co-ordinated way.

Box 1. Defining Information and Communication Technologies (ICTs)

While the common use of ICTs tends to refer to the newer technologies of phone and internet, the term ICT is best used to also include the more traditional communication media such as radio and television. Digital convergence is gradually bringing devices to the market that include the traditional media (phones with radio, media centres with computing capability and television) which will increasingly blur the distinction between old and new ICTs.

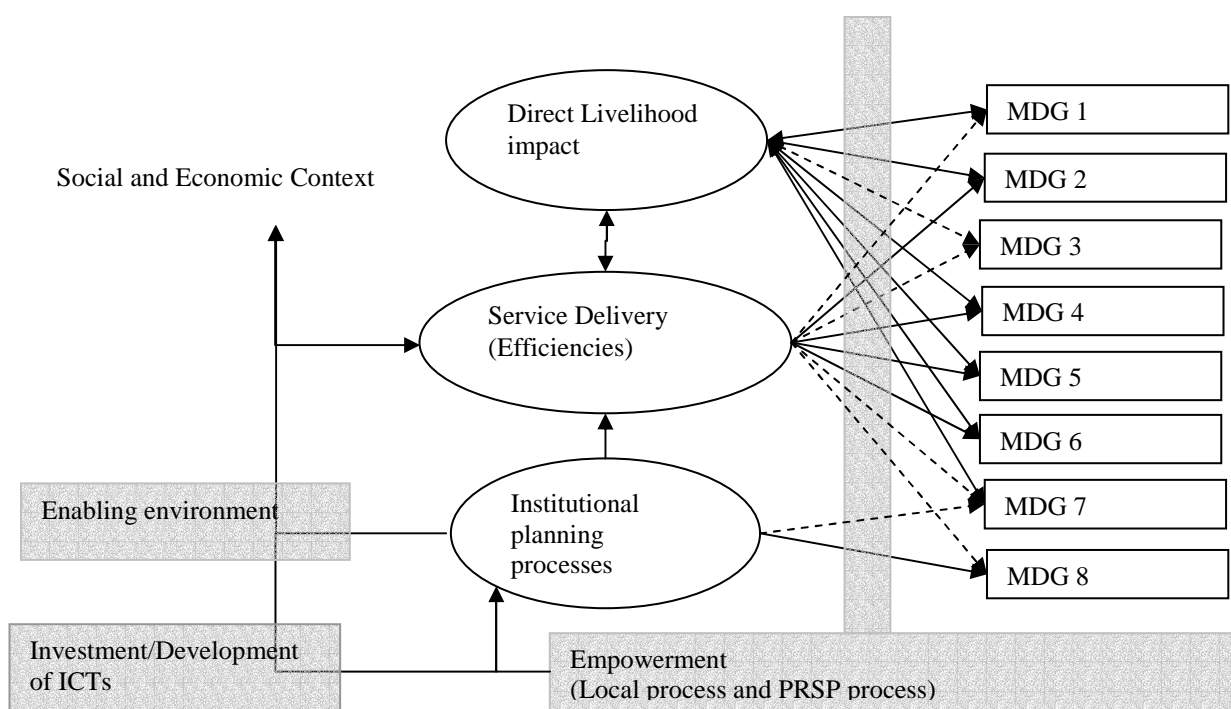
How do ICTs contribute to achieving MDGs ?

4. The MDGs have helped the development community focus. There has been a significant shift from a development community that presents achievement as the outcomes of projects and programmes, to one that is discussing the movement of whole nations and groups of people to the MDG targets. This has to be reflected in our discussion of ICTs. Many of the newer ICTs have had five years of pilots and “experimentation”. If ICTs are to contribute to the 2015 goals, they need now to be mainstreamed, i.e. to

be replicated and scaled where they are appropriate and relevant. This paper is not to convince the audience about the role of ICTs, it is to help prioritise our responses.

5. Experience has shown that ICT/technology push projects are not the best contributions to fulfilling the MDGs. MDG/development led, pulling in ICTs where appropriate and efficient, will give more poverty impact. Part of this shift from push to pull will depend on **mainstreaming**, and this will depend to a large extent on articulating ICTs potential to different audiences. A few development agencies such as USAID (2004) have seen ICTs being embedded into mainstream programmes, but most other agencies are finding the process more difficult. One of the difficulties is the barrier of insufficient information – questions over the actual impact of an ICT intervention, and of its potential to scale, replicate and to be sustainable.

Figure 1. Concept - three key processes that form the MDG Outcomes, and the key empowerment "filter"



6. In order to discuss the pull of the MDGs for the “services” of ICTs, the diagram above proposes the basic concept that the outcomes of the MDGs will be reached through three basic processes – Livelihood enhancement, Service delivery efficiencies, and efficiencies and voice in the Planning Processes. The economic and social context will be important to the relative contributions, and where pro-poor growth has been prioritised this should enhance the economic contribution (see paper on ICTs contribution to Pro-Poor Growth). Similarly the social context becomes important in that it can often determine the opportunities for voice and empowerment. Empowerment, particularly in the form of the PRSPs can be thought of as a filter that determines the flow and ultimately the impact of the processes. The linkages between each process and outcome need not be discussed here in detail. A few examples are given in the text below.

7. We would also suggest that the ICT community needs to recognise that ‘ICT sector’ projects, especially policy and infrastructure/pipe focused interventions, are only one step in a theory of change - a potential contribution to the other processes. The combination of the economy and the enabling and

regulatory environment will affect the pool of ICT choices available from which the three basic processes can pull. The targets and goals of the MDGs are impacts that are expected to be seen after such pro-poor processes have been implemented, and it is necessary for the ICT community to now describe how ICTs will affect this part of the development story. Poor people's information/knowledge comes from not one ICT but from a mixture of many ICTs, and from the information it is used to access or share. It is the use of the information at this level and the application of knowledge that creates impacts on their lives, and gives progress towards achieving the MDG targets.

How can ICTs contribute to the Planning Processes - National and International

8. We take for granted the efficiency gains made by the recent advances in electronic communication. OECD regularly publishes reports that can now be accessible to any government, any department in any country, as well as being open to public scrutiny. The media can report internationally disasters that provoke immediate humanitarian aid – while as short a time ago as 1984 the drought in Ethiopia was initially "hidden" and it was a world event to have it revealed. It would be hard to envisage some of the most effective global partnerships and networks (MDG 8) operating without the use of e-mail and international communications.

In an example of Global Partnership that works towards MDG 8 Target 2 (address the special needs of small island developing states), Japan, Australia and New Zealand co-operated to build an internal network for the University of the South Pacific (created by 12 Pacific island-countries) to send and receive training material and be able to communicate via satellite. JICA 2003

9. In terms of national planning in Africa, urban telephony, especially when linked to radio, has enabled consultation to occur where it would otherwise have been passed over. And within governments there is a much wider availability of documents even to junior officials. Specifically in regard to environment planning (MDG 7) we note that ICTs, especially media, can be used very effectively by a range of stakeholders to raise the level of **awareness and accountability** of decision/policy makers, to ensure that the principles of sustainable development are integrated into country policies and programmes. Environmental monitoring, modeling, forecasting environmental threats - as well as planning how best to manage these risks - all depend heavily on ICT tools.

The Afghanistan Codan Radio Program has linked communications among the Kabul-based Afghan government and its 32 provincial governments through an electronic network. USAID 2004

10. In this way ICTs have become an integral part of the move towards fulfilling the MDGs. Papers are shared, thoughts and concepts developed, and lessons learned from one location can be transferred at least cost.

How can ICTs contribute to Empowerment and the PRSP process?

11. Integral to effective planning is said to be the role of empowerment. The planning process needs to include empowerment of women in order to fulfil MDG 3, and empowerment of the marginalised is captured within MDG 8. Within the development community, in addition to the relatively recent shift to results based monitoring (i.e. targeting the MDGs) there has also been the very significant shift to PRSPs. The potential of an open transparent consultative process encompassed in the PRSP has yet to be fully

realised, but it is here that ICTs have a significant role to play. They can contribute to an inclusive, informed priority setting, increasing accountability and eventually good governance.

12. The role ICTs may play in the development and monitoring of PRSPs is very much determined by the current understanding and context of the PRSP process. Civil society is increasingly looking to umbrella organisations to represent the views of the poor, and contact with such organisations is enhanced by ICTs. This has strengthened information sharing and debate among civil society organisations, and has enhanced their advocacy capacity. ICTs have enhanced the new openness by government, making circulation of key documents and budgets possible (E-Government).

Connexiones, an internet/telecentre based project that prioritises discussion by young people of democracy and their roles as citizens (Batchelor et al 2003)

13. While genuine debate on the media is often lacking, the World Bank has begun to recognise that so far too little attention has been paid to the importance of information – through the media and other channels – in creating a sense of national ownership and readiness to participate in PRSPs. During the coming years we will see an increasing emphasis and dialogue on the role of development communication in both fulfilling development targets, but also in consultation and planning for reaching those targets.

14. Finally on empowerment, we note that in addition to day to day abilities for communication, and associated awareness raising, lobbying, and access to governance, ICTs are beginning to affect the basic structure of democracy. Experiments in offering access to land titles in India seem to have had a significant impact on the marginalized, and lowered corruption and opportunity costs for the user.

Gyandoot - offering land title deeds through the internet is said to dramatically reduce the time required for the consumer to access the deed, and lower corruption opportunities. (Batchelor et al 2003)

15. The three challenges in the above seem to be:

- ◆ Inclusion of the public – The PRSP process in each country is intended to be a key instrument for tackling the MDGs. A key tool within the PRSP process is participation. Participation should include both consultation and debate. ICTs offer opportunities for the poor to contribute to the formation of the PRSP – talk show radio, contacting their representatives, etc. Where access to ICTs is weak, then inclusion of the public in the formation of the PRSP may be hindered by lack of a suitable mechanisms for consultation and debate.
- ◆ Information overload – officials are beginning not to read their emails, and websites with vital lessons learned are buried. How will the planning processes include the right stakeholders, and ensure they have real access to the key information?
- ◆ Technical illiteracy (even at the highest levels). The pace of change with ICTs is so fast that everyone involved with ICTs has to constantly update their skills and learn new approaches. Senior statesmen sometimes find it difficult to make use of, and to see the application of, the new opportunities for ICTs, e.g. the first PC in an organisation often sits unused in the Director's office.

How can ICTs contribute to efficiencies in Service Delivery?

16. We have discussed above that there has been (and is ongoing) a shift in the development community from project or programme outcomes to results based performance measuring. Being results orientated shifts our emphasis, and makes the question of efficiency important. The impact on the MDG is defined by the context and the efficiencies gained. Whereas judgement of progress has in the past been made on the amounts of inputs to a delivery sector, the analysis required now must go beyond the inputs, even beyond apparent “project” efficiencies, to the efficiencies of delivery service (results orientated performance).

17. For instance (MDG2) a series of surveys on children’s educational attainment at the end of their primary education bore no relation to the amount spent per pupil. Teacher training, teacher experience, teacher evaluations, textbooks, and the timing of the day determined pupils’ performance. These results thus call into question the accepted relationship between education spending and earning potential, and hence that between education spending and poverty reduction.

Three years after traditional birth assistants in Iganga district in Uganda started using walkie-talkies as an integral part of their work the maternal mortality dropped by 50% (Skuse 2004)

18. Thus when we discuss the role of ICTs in the efficiencies of service delivery, it is a complex question, not answered by presenting the results of a single pilot project. Lanvin and Qiang (2003) discuss the role of ICTs in service delivery as a question of resource allocation. They note that the overall efficiencies are dependent on both ICT related efficiencies and non-ICT related efficiencies, and that the analysis should include the opportunity costs of a particular strategy. Potentially at the national and local authority levels, ICTs allow for more efficient use, planning and targeting of the limited resources for primary education. ICTs can improve the efficiency and effectiveness of education ministries and related bodies, but this needs to be proven in the context of the overall service delivery.

19. As above in MDG2 and the educational sector, ICTs have begun to play a role in co-ordination of resources within the health sector (MDGs 4, 5 & 6), in the ongoing training of health workers, and in the monitoring of progress towards poverty reduction. Decentralisation in countries such as Uganda has led to a more focussed and efficient use of resources, and this focus has been communicated upstream by use of the new technologies. There are clear case study examples of data gathering, and the potential for ICTs to contribute to data flow is significant.

20. ICTs are already making a significant contribution to MDG 4. Many ‘childhood diseases’ are preventable through vaccines or simply by people better understanding of the causes. And ICTs often play a key role in both. Radio-based awareness raising is playing a crucial role in the fight against HIV/AIDS, tuberculosis and other diseases. Tracking communicable diseases is becoming affordable through the use of ICTs. ICTs, especially radio and TV, also make a major impact on social change processes around HIV/AIDS, facilitating open communication, dialogue and debate. ICTs also help reduce stigma around HIV/AIDS that leads to an uptake of voluntary counselling and testing (Skuse 2004).

21. However, the progress towards the MDGs that rely on service delivery (i.e. MDG 2, 4, 5 & 6) is not based solely on the service delivery itself. It is related directly (positively or negatively) to livelihood outcomes. For instance a key challenge of education (MDG 2) is not only the effectiveness of educational delivery when at school but actually in getting the child to school.

Voxiva - a telephone and computer database for health work in Peru. Health workers phone to register communicable cases allowing planning and response, and workers gain advice supporting their day to day work. (Batchelor et al 2003)

22. The three key challenges regarding the above are:

- ◆ Distribution of resources – there is generally not enough evidence to convince all stakeholders that ICT related efficiencies were/are more effective than non-ICT related efficiencies. Without such evidence the decision makers cannot make informed decisions.
- ◆ Rapid changes in ICTs – the North is experiencing the need to constantly change and upgrade ICT systems in order to maintain the efficiencies of service. Possibly, for developing countries, what may seem a state of the art system this year, may be out of date before everyone has been trained in its use. The constant expense of upgrades should be factored into the initial cost benefit analysis. There is a need of further reflection on the trade off with cost-drops and higher level of service.
- ◆ Capacity in effectively using ICT for development is often the main constraint, not equipment. Training programmes need to be in place for the effective use of ICTs. Having said that, "simple to use" technology such as the phone has shown to be intuitive and human capacity to be developed by viral training¹.

How can ICTs contribute to the MDGS through Livelihood enhancement?

23. We have already acknowledged the interwoven mechanisms for fulfilling the MDGs. MDG 4,5 and 6 will not be fulfilled only through service delivery of better health care.

“Health services play an important role in promoting and protecting health. But, in the long term, economic security, education, nutrition, water, sanitation and the broader physical and social environment are the arbiters of population health prospects. These factors tend to move together. Their combined impact is illustrated by the well-known relationship between income and infant mortality.” (DFID 2001)

24. Since the opportunities for ICTs are moved forward by the private sector (where and when there is an enabling policy and regulatory environment), opportunities for "unplanned" service delivery efficiencies are often available for the public. For instance, Ugandan rural health staff have found the phone brings them opportunity to request support, and have found their activities improved. Similarly the availability of phones in rural Uganda also presents an opportunity for the rural poor. These opportunities can benefit rural livelihoods or not as the case may be – they are opportunities and as such they most likely will have a combination of beneficial and harmful effects. Pro-poor policies should seek to ensure that the marginalised can take up the opportunities where they are beneficial to them, and reduce the harmful affects where possible.

¹ Digital convergence means that "telephones" are rapidly becoming gateways to various forms of communication – they have synchronous voice transactions, asynchronous voice transactions, text, images, video, and radio reception. And they are increasingly being used for financial transactions. Where the technology is simple enough for viral training (neighbour teaching neighbour how to use), then uptake by the poor seems to occur.

25. For instance MDG1, the accompanying paper (How do ICTs contribute to Pro-Poor Growth), shows how infrastructure, agriculture and private sector development can work together with ICTs to bring about pro-poor growth in rural areas. Telecommunications alone can change some aspects of the market, but it is the combination of the developmental changes that lead to lasting effects.

The Southern Africa Sustainable Tree Crops Program (STCP) uses a portal, consisting of a website and Intranet, for coordination of field activities among partners in coffee, cocoa and other tree crops. (USAID 2004)

26. Similarly with MDG 3, women, particularly women in developing countries, often do not benefit from new technologies, a reflection of the existing unequal power relations in societies as a whole. ICTs can be used to either exacerbate or transform unequal power relations. ICTs cannot create gender equality, nor end poverty, but they can be powerful tools for social action and positive social change.

Box 2. Gender and ICTs

Recent studies in Africa show that there is near equal use of the telephone by women as by men. Given women's unequal status, this effectively means that the telephone has opened new opportunities and is redressing some imbalances. (McKemey et al 2004) Telephones have been very effectively used by Grameen to empower women in small businesses that serve their community (DAC POVNET 2004). There are some case studies that suggest that ICTs open new economic opportunities for women by lowering the need to travel (Batchelor et al 2003), however more research is required before this can be positively asserted.

27. It is possible that phones (and other simple to use ICT devices) may be used to open new opportunities for women to communicate, learn and undertake economic activities.

28. Regarding MDG 7, in particular urban slum development, recent studies show that slum dwellers spend almost as much on communication as they do on energy – an indication that ICTs are a high priority for the poor and is an essential tool for managing livelihood assets. Similarly, a number of studies show that young people can develop productive work skills through use of ICTs.

29. Information and communication exchanges among the poor will be based on a mix of technologies. It is the information and communication that is important for the MDGs and no one technology should overshadow the use of other contextually appropriate ones.

30. The three key challenges for the above are:

- ◆ Equal access therefore means equality of access – no penalty price for the poor. *"For ICT to have a positive development impact, the various social groups must have equal access to them, particularly disadvantaged groups such as the poor, children and indigenous people."* (CIDA in OECD 2004). Recent studies on phone and radio use suggest that the marginalised can have access to the technology but they may pay a higher price per unit of use.
- ◆ Useful relevant content is a key requirement. Access to ICTs alone is not enough to fulfil the MDGs. It is access to useful content that will contribute to MDG1 (eg market prices), MDG 4 (mother child health messages), MDG 7 (government policies on slum development), MDG 8 (local job opportunities for youth), anti-corruption (land titles availability), empowerment (contribution to debates on media about the PRSP).

- ◆ Creating an enabling environment that allows the poor to be creative – e.g. in Uganda, trading of airtime has already been developed by the public. This virtual currency reduces transactions costs and risks within the country. It is easy to say what technologies will be available in five to ten years, but it is impossible to say how people will use them. Spontaneous actions such as the virtual trading in Uganda, need policy environments flexible enough to support pro-poor response to ICT innovations.

Recommendations

31. The paper has focussed on the three key processes that lead to the MDGs. ICTs can enhance these processes and experience has clearly shown some potential uses. The question for policy makers is no longer whether ICT can be used or not - it can. However, the question is now is "should it be used?"

32. We need to ask "Which is the best strategy for enhancing livelihoods, for increasing delivery efficiencies and for improving planning processes?" Closely followed by the question - "is the most effective strategy one that includes ICTs?" ICTs do not need to be treated as a separate path to the MDGs but as a tool to enhance the key processes.

33. Having taken this approach there remain some realities that must be faced by donors, namely:

- ◆ **Capacity** in effectively using ICT for development and useful content are often the main constraints, not equipment.
- ◆ Therefore within the time frame of the MDGs (2015), digital devices with **simple interfaces** will be the main tool at field level.
- ◆ The **private sector** is instrumental in expanding ICT for development access, but other players (governments, civil society, etc.) should lead on applications.
- ◆ **Development of "developmental" content** on and through such devices should be a priority for donors. This development should not occur in the "ICT sector", but within the sectoral response – education, health, governance.
- ◆ Incorporating ICTs into the planning of development interventions requires an **analysis of "with" and "without" scenarios**, and this requires more rigorous analysis of the possibilities of replicating and scaling current pilots.
- ◆ In order to do a more rigorous analysis, we **need more data** on the linkages between the use of ICT and the impact on the MDGs.

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