

ICT and poverty reduction: mobile telecommunications advancing fast

With the global spread and falling costs of the mobile telephone it has now become affordable even for poorer people in rural areas of developing countries. Its diverse uses contribute to economic and social integration. However, other ICT technologies such as radio and the Internet also have an important role in rural development today.

In the past rural areas of developing countries were not exactly well-known for the use of information technology, but in recent years, with the global spread of the mobile phone, something of a silent revolution has taken place here. Aided as well by the liberalisation of the telecommunications market in many developing countries, mobile phone ownership is growing by an average of 51 percent annually in sub-Saharan Africa, more than twice the rate in Europe, for example, where it is only 19 percent (2001–2005; Wireless Intelligence). The rapid spread of this technology is a sign of the considerable benefits that people, in less developed regions as elsewhere, expect from the telephone, but it also shows that the plummeting costs of buying and using a phone are making it accessible to poorer groups.

New studies point to the fact that a low per capita income does not nec-

essarily equate to a low distribution of mobile phones, as was previously assumed. In Asia, Africa and Latin America there are many countries with incomes of less than 1,000 US dollars per head where mobile phone ownership is as high as 70 percent (Africa) and 90 percent of the population (Asia and Latin America).

Particularly in rural areas, even simple spoken communication by mobile

phone offers a wide range of additional employment opportunities, outside agriculture as well, and is therefore a valuable means of reducing poverty (through pro-poor growth). Apart from the direct effects for the user there are also indirect effects: in a recent study covering Serbia, Bangladesh, Ukraine, Malaysia and Thailand Deloitte, the consultancy group, found that the contribution of mobile phone technology to the GNP amounted to between 4.5 and 6 percent and in addition between 36,000 jobs (in Serbia) and 244,000 (in Pakistan) had been created, the majority in the retail trade of mobile phones and prepaid cards. As well as this the levies paid by network operators make up as much as 24 percent of the tax revenue of the countries studied.

The many possible applications of ICT

Significant additional benefits accrue in terms of **market efficiency**

“Mobile banking” closes the gap between the rural customer and the financial institutions in town.



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and **information asymmetry**. Particularly in remote regions farmers, as well as micro-enterprises and small businesses, can gain rapid access to market data such as prices and commodity availability, which saves money and time-consuming travelling. It also makes it possible to reach markets further afield, or new customers who would not be contactable without mobile phones. A number of examples show that farmers have been able to achieve prices up to 50 percent higher and significantly increase their sales (and as a result their income).

Another important aspect of its usefulness is the improvement in the **social integration** of the rural population. Apart from better communication with business partners, friends and above all family members in other villages and regions, in many countries this also applies to communication with relatives who have migrated to industrial countries and are now sending money home to their families. In some regions these remittances constitute an important source of income for the local population. Communication with relatives forms an important basis for effective money transfer.

No less important is the **political involvement** of the rural population. It is especially the poor people in rural areas who often lack information about their rights and entitlements, and yet their interests are seldom considered at government level, since they lack effective lobbying power. In India, Sakshi, a non-governmental organisation for women's rights, was able to push through guidelines to prevent sexual harassment in the workplace. This was done by targeted lobbying of the government. By joining an international women's information network the NGO obtained key information and advice which enabled it to engage in such effective lobbying.

New possibilities for **medical care** and **disaster risk management** are also emerging through telecommunication. Medical advice or emergency

Mobile banking in Uganda

Michiva Stephen repairs radios. He has only a modest income, but can nevertheless put some of it into savings. To ensure that his savings are safe he takes his surplus income to his bank, the UML microfinance institution, which specialises in dealing with low earners, as often as possible. Several times a month he takes a taxi from Kanguamiri in Uganda to the nearest UML branch in Kayunga, about 20 kilometres away. However, of the 40,000 shillings (17 euros) that he puts aside on average every month he needs 10,000 shillings just to cover his travel-



Photo: Weald

Agent banking at a local store in a small Ugandan village.

ling costs to the nearest UML branch, not allowing for loss of earnings. Since UML installed an agent in his home village he saves the travelling costs and so can put away a third more. The agent, a local shopkeeper, enters the transactions directly into the UML system via a payment terminal and mobile Internet connection, after both men have logged into the system with chip cards. This produces significant savings for UML in the otherwise labour-intensive microfinance business, and these can in turn be passed on to the customers. The pilot project, funded by German Financial Cooperation, provides strong evidence of ICT's supporting role in the reduction of poverty, in this case in the financial services sector.

calls via mobile phone can provide quick and efficient assistance, and in the case of disasters or periodic isolation, for example because of rain or snow, the mobile phone makes it possible to get help and support.

Developments in information technology

Information and communication technologies are not restricted to the mobile phone and are subject to constant change. Before the mobile phone became cheap and therefore universally available the chief means of communication for those in rural areas was **radio**. Battery-driven radios can be used almost everywhere and the programmes are broadcast even to remote regions. Although this method of communication is public and only

operates in one direction, it remains an important way of reaching cultures and regions in which the printed media have limited distribution, for example, to broadcast programmes specifically for farmers or on Aids prevention.

In Mali a form of (public) individual communication is available on public radio: for a small fee listeners can have short news items such as birth or death announcements broadcast for members of their families living further away.

As well as the state-run stations, **community radio stations** have been established in many developing countries, run mainly by committed individuals or NGOs. Their transmission range is limited, as is the selection of programmes, but the cultural, linguistic and socio-economic needs of the listeners are better served.

Landline telephones have never been widely adopted in rural areas of developing countries, partly because of the high cost. With the rapid spread of the mobile phone this technology will effectively be bypassed (**leap-frogging**).

Data communication via mobile phone offers whole new possibilities, for example by means of the popular SMS text-messaging service which allows short texts of up to 160 characters. In Kenya the Kenya Agricultural Commodity Exchange (KACE) provides a text-messaging service for enquiries about the latest fruit and vegetable prices.

Another example is "mobile banking", which has been particularly successful in developing countries, as demonstrated by the case of the micro-finance institution in Uganda described in the Box on page 12. Through this micro-enterprises in remote rural areas gain **access to banking services** which were almost impossible to use before because of long expensive journeys. As a result of the simple payment method previously loss-making service provision can suddenly become very profitable.

However, in order to send more sophisticated ICT applications or larger amounts of data, Internet access via cable or satellite and a reliable electricity supply are essential. Particularly in developing countries both involve high installation and running costs – that is if they are available at all. One response to this is to set up **telecentres** (see article on pages 23-25), which

offer large numbers of users without their own computers. Internet access and other services such as photocopying, e-mail, printing photographs, user-specific research and training courses. Like community radios these business models are dependent on grants, at least in the initial phase. An interesting variant is to combine the two to create a multi-purpose community centre. Journalists can research up-to-date information for their radio items easily and quickly on the Internet, and they can also inform their public about news coming in by e-mail: a substitute for letter post.

Outlook: good

While mobile phone ownership in the industrial nations is reaching saturation point and the main area of growth is in broadband Internet connection, in developing countries speech-based communication via mobile phone remains at the forefront. The creative potential of users and suppliers of mobile phone technology has already led to the emergence of many ICT applications which actively and effectively support the efforts of developing countries and donors to reduce poverty.

Without further expansion and use of the Internet greater participation by developing countries in the information society and more extensive integration in the global economy will be hard to achieve. In terms of technological development the situation is favourable: WiMAX and UMTS, two

wireless technologies offering comparatively cheap broadband Internet, are available; robust energy-saving notebook computers, often with no moving parts, known as Netboxes and Netbooks, are now finding their way into the shops; and the free software community offers a wide range of applications without charge, the foremost being the OpenOffice suite, which is now available in more than 100 languages.

The creative potential in developing countries will use these tools to generate new developments not yet envisaged (who would have foreseen the current importance of Google or You Tube 10 years ago?) which will, among other things, allow greater ICT use by the illiterate through speech recognition technology.

Despite successful involvement of private enterprise, especially in mobile phone technology, donors will still be needed in the future to fund the further expansion of ICT in developing countries: many microfinance institutions need significant support to set up mobile banking systems, there are not enough vocational colleges to train qualified ICT staff, and there remains a shortage of funding and advisers for the improvement of transboundary telecommunications networks, especially in sub-Saharan Africa. E-government solutions are complex and training-intensive, and donors can play an important part in raising awareness of the responsible use of ICT, particularly with regard to security and respect for privacy.

Zusammenfassung

Informations- und Kommunikationstechnologien (IKT) unterstützen in vielfältiger Weise die Anstrengungen zur Bekämpfung von Armut. Vor allem die weltweite Verbreitung und die sinkenden Kosten für Mobiltelefone haben auch der ärmeren Bevölkerung in ländlichen Gebieten von Entwicklungsländern neue Kommunikationsmöglichkeiten eröffnet. Die vielseitige Nutzung trägt zur wirtschaftli-

chen Entwicklung und sozialen Integration bei. Aber auch andere IKT-Technologien wie das Radio und Internet spielen in der ländlichen Entwicklung von heute eine wichtige Rolle.

Resumen

Las tecnologías de información y comunicación (TIC) apoyan de múltiples formas los esfuerzos por combatir la pobreza. Sobre todo la distribución a nivel

mundial y la disminución de los costos de los teléfonos celulares han abierto nuevas posibilidades de comunicación también para la población más pobre de las zonas rurales en los países en desarrollo. El uso múltiple de estos teléfonos contribuye al desarrollo económico y la integración social. Pero también otras TIC, como la radio y la Internet, juegan un papel importante en el desarrollo rural de hoy en día.