

Better connected – empowering people through communications technology

The development of new information and communications technologies (ICTs) such as mobile phones, personal computers and the Internet has the potential to improve the lives of millions of people. But issues around access, ownership of the technology and how much it costs may mean that relatively few individuals benefit to the exclusion of everyone else.



Amar Singh Verma checks online crop prices at an Internet cafe in the village of Siradi in Madhya Pradesh, India. An international company has set up free Internet kiosks with local language websites detailing crop-specific information in remote villages throughout the region.

AMI VITALE | PANOS PICTURES

Media toolkit on communicating research

This is the fifth in a series of briefing documents for the media from the RELAY programme. RELAY works with Southern print and broadcast journalists to communicate the findings of academic research in an accessible way. The briefings set out the main issues around a topic, prompting journalists to pursue ideas and do further story research themselves. If you wish to receive future media briefings by email, please contact media@panos.org.uk

To find out more about the Panos RELAY programme go to www.panos.org.uk/relay

Furthermore, when communications infrastructure – telephone lines, cables for high-speed Internet connection, mobile phone networks – is inadequate, more people may be excluded from the information that technological advances can bring. Researchers underline the importance of a liberalised, rather than state-owned, telecommunications sector meeting ordinary peoples' information needs.

So, while ICTs are helping fishermen in India to sell their sardines, farmers in Uganda to get the right price for their maize, and women in Bangladesh to run their own businesses, this good news is not the whole story.



An employee of Terracom, a telecommunications firm, working on a transmitter/receiver for mobile phone communications in a rural area of Rwanda.

SVEN TORFINN | PANOS PICTURES

Infrastructure matters

Some researchers - Alberto Escudero-Pascual for example - have shown that innovative technology, such as communications networks that function using radio waves rather than wires – wireless networks – can play a crucial short term role when physical infrastructure is absent. The cost can be high however: Eastern Africa is an example of where a reliance on satellite links to make telephone calls outside the region is expensive. Citizens pay around US\$92 for 20 hours online compared with the world average of US\$40.

Recent efforts to expand Africa's communications infrastructure are based on development agencies' perception that the lack of access to affordable, high-quality telecommunications services is holding back growth and development.

The East Africa Submarine System project aims to install an undersea fibre-optic cable connecting South Africa to Eastern Africa, the Middle East and Europe, which would run on a so-called 'open access' system – accessible by all licensed international telecommunications companies. The World Bank is among the agencies that funded the phase of this project which upgraded infrastructure in Kenya, Burundi and Madagascar.

Markets can play a role in providing ICT infrastructure. Muriuki Mureithi argued in 2007 that equitable access to ICT infrastructure is possible with the right business models. However, private companies are reluctant to roll out services that will not make a profit, so markets do not always reach marginalised groups, including poor and rural communities. Enhanced infrastructure should mean greater and wider access to ICTs. One question is whether access is better provided by government or private suppliers.

The universal access fund is a levy that many governments place on private companies to raise money for strategic communications infrastructure projects that will reach the most remote areas, far beyond the limits that commercial companies will service.

This scheme has had mixed success: there can be a lack of accountability for the money collected and how it is spent, and companies do not always fulfil their obligations. For example, Harsha da Silva and Payal Malik of Learning Initiatives on Reforms for Network Economies found that some operators in India prefer to pay the fine for not fulfilling their contractual obligations rather than install the telephone lines as they agreed.

The localisation of infrastructure is important. First, new communications infrastructure will cost less to install if it works alongside existing infrastructure such as electricity cables or road networks. Second, it is important that technology is owned and controlled locally, as illustrated by the success of village knowledge centres in India described by Subbiah Arunachalam. These centres involve local people in content production and use local languages and video and audio formats to enable illiterate people to use them.

Mark Warschauer of the University of California published research in 2004 that focused less on infrastructure and more on what people do with the technology – in other words, what matters is not the physical availability of, say, computers, but rather people's ability to use them. He says that too often technology projects focus on providing software and hardware, and pay insufficient attention to culture and social systems that inhibit the use of ICTs by some people. In a 2007 study, Shirin Madon also found that existing social exclusion within communities in India was being replicated in the different levels of access certain social groups had to ICTs.

While many countries have developed policies and strategies for national information infrastructures, in many cases a lack of resources and proper institutional frameworks have made them difficult to implement.

Questions for journalists to ask

- How much money has your government collected for the universal access fund? Is there a public plan for how this money will be spent?
- How much money is being invested in infrastructure and is it enough to support telecommunications growth?
- Where should your government invest to improve communications infrastructure? In rural or semi-urban areas? In wireless or broadband technology?
- Who owns and controls new communications technology companies in your country?
- Is local research needed to improve access to ICTs in your country or region?

Technology in context – e-agriculture

Information is a vital resource for agricultural workers. It helps them make informed decisions on what crops to plant and when, and which fertilisers and new seeds to buy, as well as finding out about diseases and the weather. Information systems for farming – ‘e-agriculture’ – should not be a one-way flow of information. They should be a place where farmers and fishermen can contribute and share their own knowledge. Egypt’s Virtual Extension and Research Communication Network (VERCON) allows smallholder farmers to access and share information resources and ask questions of researchers and extension workers.

Other research questions the use of ICTs for livelihoods. For example, David Souter et al in 2005 found that in India, Mozambique and Tanzania, telephone technology was used for social networking above agriculture and business.

‘Information makes markets work, and markets improve welfare.’

Robert T Jensen

Visiting associate professor,
Watson Institute for International Studies, US

However, Robert Jensen finds the opposite. He describes how the introduction of a mobile phone network in Kerala, southern India, has transformed the sardine industry. Using their phones while still at sea, fishermen can identify which market will take their fish and how much they will get for them. The result has been a rise in profits for the fishermen, a fall in the average price for the consumer and an end to waste, as unwanted dead fish are no longer dumped back into the sea.

Farmers in Uganda have also put their mobiles to good use, using them to check prices at the touch of a button. This is thanks to a system called Foodnet, which collates market information from around the country and makes it available to farmers by text message.

India has also experimented with the use of ICTs to help farmers, establishing telecentres – a public place where people can access computers, phones and the Internet – that provide them with information about pricing, weather conditions and cropping practices. However, research by Drs VP Sharma and KP Rao in 2005 indicated that these have not always been successful; the kiosks tend to be supply-driven and do not provide the information that farmers actually need.

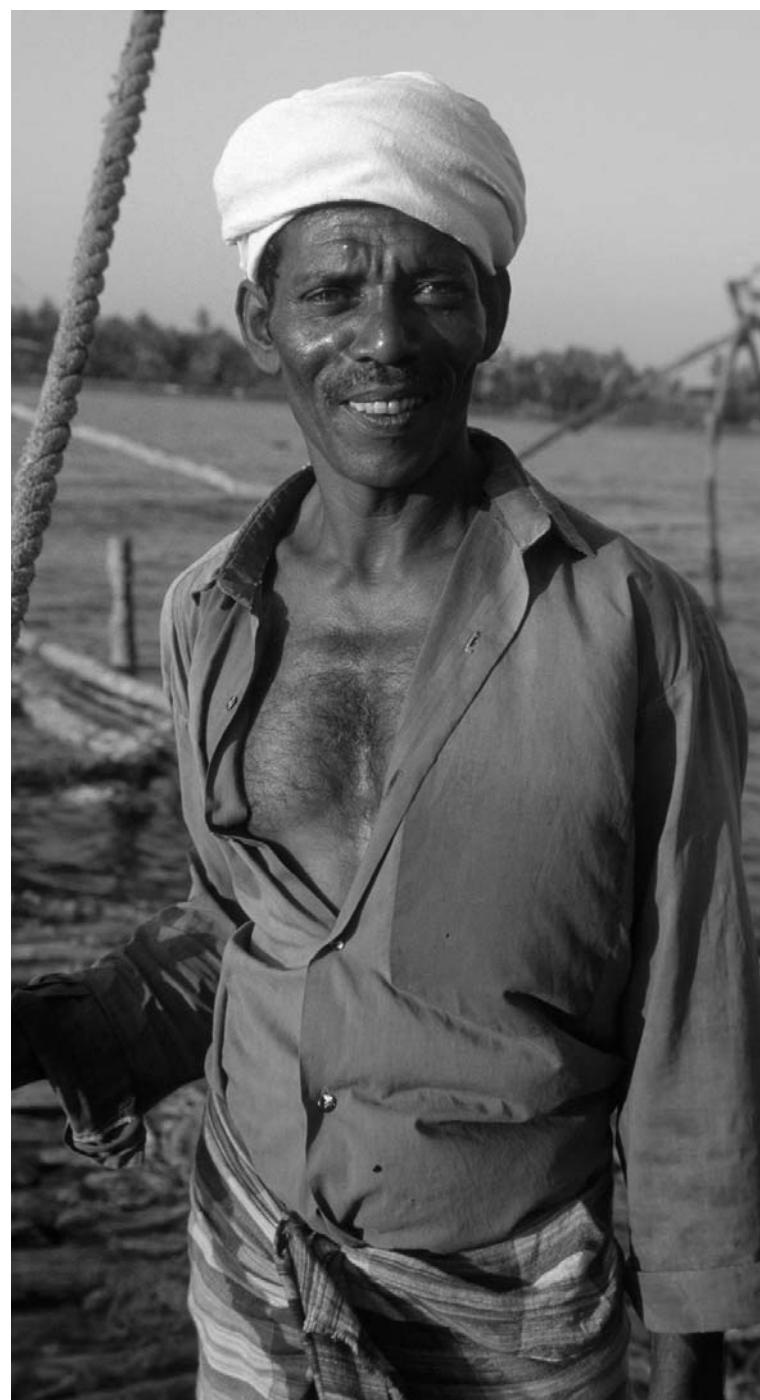
The agriculture website www.e-agriculture.org underlines the importance of making technical information available in local languages, and recognises that existing channels for technical information (such as farming extension services and radio stations) must be linked up with ICT systems to increase accessibility for rural farmers. Whatever is set up must be financially viable.

Questions for journalists to ask

- What methods of communication are regularly used by farmers in your country? Could they benefit from any developments in access to ICTs?
- Is there any research to show that greater knowledge-sharing has led to improvements in productivity within your country?
- What role do more traditional forms of communication such as radio and telephones play?
- What scope is there for the ministry of agriculture and farmers’ organisations to work together to develop viable information systems? Could any discussions be informed by local research?
- What role do ICTs play in improving the uptake of indigenous innovations?

A mobile phone network in Kerala, India, has transformed the sardine fishing industry, allowing fishermen to identify markets for their fish while still at sea.

MARK HENLEY | PANOS PICTURES





Micro-entrepreneurs – mostly women – in Bangladesh have been given loans by the Grameen Bank to buy mobile phones which they then rent out to local users for a fee. This has been a highly successful business model, helping more than 200,000 people.
G. M. B. AKASH | PANOS PICTURES

Non-agricultural economic activity

Some researchers – look at www.researchictafrica.net for example – have seen a link between an increased use of ICTs and economic growth. A 2006 World Bank study found that using ICTs creates business opportunities and can make firms more efficient.

The Village Phone Programme is a prime example of a successful business model pioneered in Bangladesh and replicated in Uganda. Micro-entrepreneurs – mostly women – buy a mobile phone financed by a loan from the Grameen Bank. They then rent the phone to local users for a fee. Grameen says this has provided a good income-earning opportunity to more than 200,000 people. Abdul Bayes et al commented in their 1999 research that the project in Bangladesh has raised the social status of those who own the mobile pay phones and has made women more mobile themselves both within and outside their villages. A similar scheme in Uganda, MTN villagePhone, established more than 6,700 new businesses in its first three years.

Other research questions the link between ICT use and economic growth. Shyamal Chowdhury of the Global Development Network and Susanne Wolf of Bonn University found in their 2003 study that the effects of ICTs on economic growth in Kenya and Tanzania were complex. They had no significant impact on returns and export performance, and had a negative impact on labour productivity.

In Kenya, mobile phones are being put to a slightly different use, as 'electronic wallets'. Using a system called M-pesa, users can transfer money onto their phone account which they can then send via SMS (text messaging) to anyone they want. The recipient then goes into an office with his or her mobile and some ID and collects the money. It's hoped that such transactions will soon be cashless – that you will be able to pay a taxi fare, for example, by sending a text message. The potential for remittances sent back to developing countries from overseas using this method is enormous.

But Torero and von Braun, both from the International Food Policy Research Institute, warn that coherent strategies and the right regulatory policies are needed to avoid scarce resources being misallocated, impeding ICT growth.

ICTs are also emerging as useful tools for social mobilisation. Redante Asuncion-Reed's 2007 study of African activist organisation Fahamu found that SMS and mobile phones enabled them to mobilise a significant number of people for their campaigns, despite having limited resources. There is, however, very limited research on this aspect of ICT usage.

Questions for journalists to ask

- What research has been done on the contribution of ICTs to economic growth in your country?
- What should your country do to better integrate ICTs into the development of utilities, education, transport and health?
- If there has been economic growth, has everyone felt the benefits? Or are the gains concentrated in the hands of a few people and some key organisations?
- What potential uses are there for ICTs in the future – for example, remittance sending – and is any research being done on this locally?

Government and policies

The e-readiness index – a tool that measures a population's capacity to use ICTs – shows that some governments have made great use of ICTs to enhance service delivery to the public – 'e-government' – using them to implement democratic processes such as voting, land registry and land entitlement. Many countries, however, lag behind in terms of the infrastructure and capacity to do the same. They are not 'e-ready'.

'I wish these machines had come into existence a long time ago.'

Umar from Kerala, India, tells how paying his electricity bill at a public kiosk now takes only five minutes

Richard Heeks uses the example of the Indian Railways' passenger reservation system to show e-readiness and good community engagement with the e-government process. The system has reduced corruption and significantly improved efficiency and the quality of customer service.

In another example from India, the FRIENDS project allows people in Kerala state to pay their bills electronically at a public kiosk. Anecdotal evidence suggests that this has been a great success, cutting the payment time from an all-day wait to a matter of minutes.

While countries such as Venezuela have made good progress in using ICTs to implement better democratic processes (here using fingerprinting technology to identify voters), other countries lack the infrastructure and capacity to do the same.

DERMOT TATLOW | PANOS PICTURES

There are also reports of how projects like FRIENDS or CARD in the Indian state of Andhra Pradesh have reduced corruption, making it harder for officials to extract bribes in exchange for services. This does, however, bring with it problems of its own: as Bruce Berman and Wisdom Tettey argued in their 2001 research, strong anti-corruption legislation is needed if e-government is to work in the long term. Research in Kenya and Uganda led them to conclude that without specific legislation, officials will try to sabotage the system precisely because they are no longer able to extract bribes.

Other research indicates that e-government has to be an integrated process for it to work in the long term. Analysts point out that it will fail unless it is closely aligned with other development agendas such as education, investment policies or telecoms deregulation.

Installing electronic administrative systems does not mean there is no longer the need to find out what users want and need from such a system. After the upgrade of the UK's National Health Service information technology provision, criticism centred on the failure to consult with health professionals about their needs and the cost of designing the new system.

Questions for journalists to ask

- Has there been any research in your country on whether e-government makes any difference to the potential for corruption or the quality of government?
- Are there any e-government applications that have had an impact on the lives of people in your country?
- Are there examples of citizens or communities who have particularly benefited from or lost out to e-governance?



Key issues for journalists

Journalists can use academic research as both a starting point and a reference point. For example, a study of the correlation between ICTs and economic growth might lead a journalist to look for businesses in their patch that have introduced ICTs. Equally, research may already have been published that could help a journalist with wider points of comparison for a local story.

The Internet is an ideal tool for gaining access to research all over the world, and search engines can help find specific pieces of work. Research from well-known academic institutions often gets national or international press coverage, which is how journalists might hear about it first. However, there is often a gap between academic research and what is currently happening in the information society; for example, there is very little research on social networking, despite this being a huge phenomenon.

Like all information resources, academic research needs to be handled carefully. It is carried out by a range of organisations for a range of reasons. Some of the issues journalists may want to consider when using academic research are:

- Who is doing the research and why?
- Are they working independently, or are they funded by government or a private company?
- Is the research designed to influence policy, or is it being done to confirm a previously held belief?
- How was the research done?
- How did the researchers react to the results of their research? Were they surprised by what they found?

When interviewing a researcher, asking specific and focused questions is more likely to elicit focused responses. Equally, being clear about the information needed will help a journalist frame the questions correctly.

Many of the issues debated in this briefing are precisely that – debatable. So, if one piece of research indicates scepticism about, for example, the relationship between ICTs and growth, it is very likely that there will be another study to counter that proposition.

Debating the pros and cons of an idea is often the most informative way of approaching it. Ultimately, finding innovative approaches to reporting the issues and advances of information society, which move away from the traditional economic point of view, should prove to be more fruitful sources of material for journalists.

Research resources

Subbiah Arunachalam (2005) 'From a small beginning to a mass movement: The story of India's Mission 2007' in *Information and communication technologies and large-scale poverty reduction: Lessons from Asia, Africa, Latin America and the Caribbean*, Swiss Agency for Development Cooperation and Panos London

Redante Asuncion-Reed (2007) *Mobile phones and Fahamu: An evolution in political communication*, a directed research project submitted to the Faculty of the Public Communication Graduate Program, American University, Washington DC

Abdul Bayes, Joachim von Braun and Rasheda Akhter (1999) *Village pay phones and poverty reduction: Insights from a Grameen Bank initiative in Bangladesh*, ZEF discussion papers on development policy No 8, Center for Development Research, Bonn, www.telecommons.com/villagephone/Bayes99.pdf

Bruce Berman and Wisdom Tettey (2001) 'African states, bureaucratic culture and computer fixes', *Public Administration and Development* 21, pp 1-13

Shyamal Chowdhury and Susanne Wolf (2003) *Use of ICTs and the economic performance of SMEs in East Africa*

Harsha da Silva and Payal Malik (2005) *Diversifying network participation: A study of India's universal service instruments*, www.regulateonline.org

Alberto Escudero-Pascual (2007) *Tools and technologies for equitable access*, <http://access.apc.org>

Food and Agriculture Organization (undated) 'e-Agriculture': *A definition and profile of its application*, www.fao.org/rdm/doc/e-agriculture%2014-10-051.pdf

FRIENDS project, www.egov4dev.org/friends.htm

Richard Heeks (ed) (1998) *Information Age reform of the public sector: The potential and problems of IT for India*

Robert Jensen (2007) *The digital provide: Information (technology), market performance, and welfare in the South Indian fisheries sector*, www.mitpressjournals.org

Shirin Madon (2007) *Telecentres and development: A social space approach*, London School of Economics and Political Science, <http://ls2.lse.ac.uk/wp/pdf/wp164.pdf>

Shirin Madon and Sundeep Sahay (2002) 'An information-based model of NGO mediation for the empowerment of slum dwellers in Bangalore', *The Information Society*, 18, pp 13-19

Muriuki Mureithi (2007) *Business models for equitable access to communication infrastructure: Features for sustainability*, <http://access.apc.org>

V Sharma and K Rao (2005) *Bridging the digital divide: Information kiosks in rural India – challenges and opportunities*, Third International Conference on Rural India, 10-12 November 2005 www.bhoovikas.org/BVF/conference_pdf/volume2_theme7.pdf

David Souter, Christopher Garforth, Rekha Jain, Ophelia Mascarenhas, Nigel Scott (2005) *The economic impact of telecommunications on rural livelihoods and poverty reduction: A study of rural communities in India (Gujarat, Mozambique and Tanzania)*, www.cto.int

Maximo Torero and Joachim von Braun (2006) *Information and communication technologies for development and poverty reduction: The potential of telecommunications*, Baltimore: Johns Hopkins University Press and IFPRI

VERCON, www.vercon.sci.eg

Mark Warschauer (2004) *Technology and social inclusion: Rethinking the digital divide*, www.mitpress.org

World Bank (2006) *Information and communications for development: Global trends and policies*



© Panos, February 2008

The Relay programme is implemented by the Panos Network around the world. The network works with the media to stimulate debate on global and national development issues.

Other briefings in this series can be found at www.panos.org.uk/relay

For further information contact:

**External Relations Unit
Panos London
9 White Lion Street
London N1 9PD
UK**

Tel: +44 (0)20 7278 1111
Fax: +44 (0)20 7278 0345
media@panos.org.uk
www.panos.org.uk/relay