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University of Sussex

At the water's edge

FALMER

Meeting the energy challenge? Professor Gordon MacKerron expresses his reaction to the Energy White Paper/ *At the water's edge*: Richard Soulsby discusses some of the most compelling concerns of our planet/ Making the message count: how mobile phones are at the forefront of conservation and development/ Funny weather: Kate Evans shares her illustrative cartoons with *Falmer*

Making the message count

Cell phones have been adopted at a pace unmatched by any technology in the history of mankind. While conventional use of these devices continues to expand, mobile phones are also increasingly being viewed as tools for conservation and development. **Ken Banks** (AFRAS 1996), currently a Visiting Fellow on the Reuters Digital Vision Program at Stanford University, understands this well.

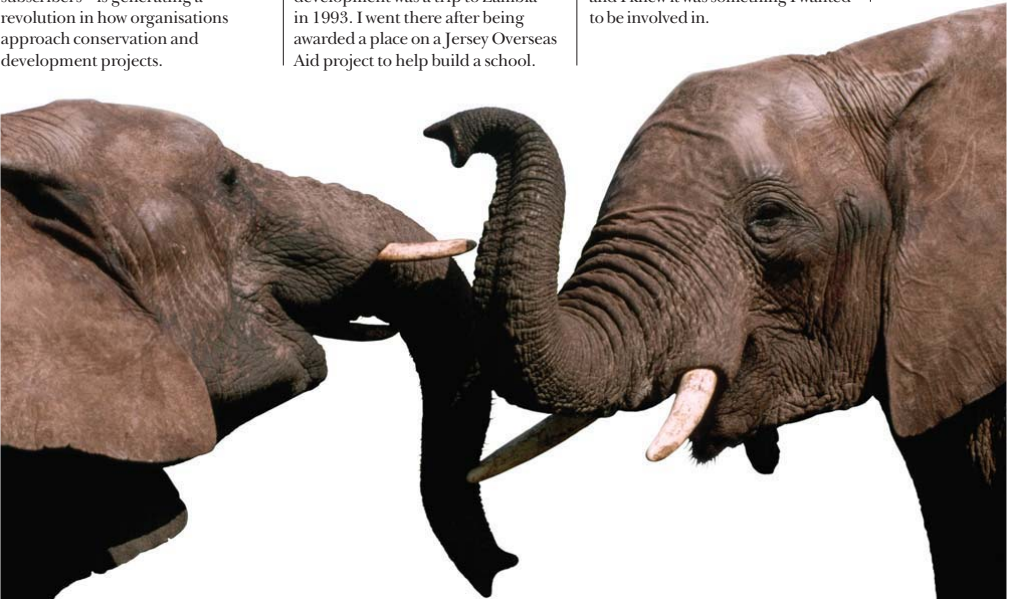
Ken established *kiwanja.net* as a hub for the latest information on how technology, in particular mobile phones, can be applied to tackle issues of economic empowerment, conservation, education, human rights and poverty alleviation. Ken argues that the development of low-cost handsets and the spread of second-hand phones into emerging markets like South Asia and Africa – one of the fastest growing markets with well in excess of 125 million subscribers – is generating a revolution in how organisations approach conservation and development projects.

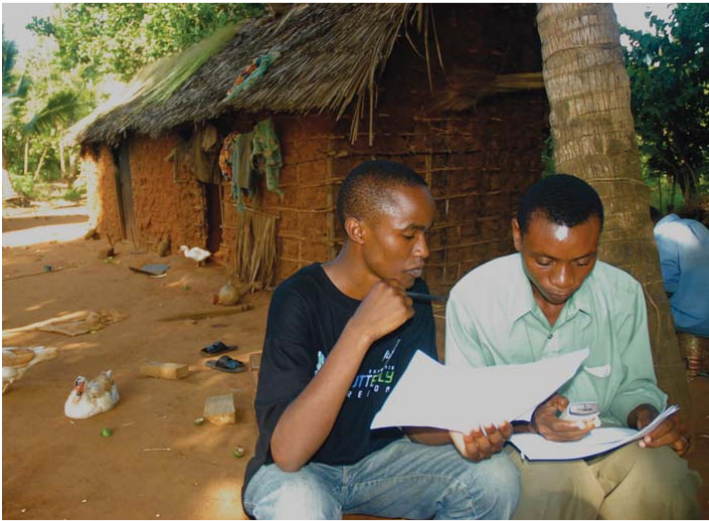
How did you become involved with applying mobile technology to conservation and development?

Originally I was in the Information Technology (IT) industry but my mother and grandparents have always been very keen on nature and the environment. I must have inherited the family gene for nature because I've been fascinated by the outdoors since I was a child. The experience that really cemented my interest in conservation and development was a trip to Zambia in 1993. I went there after being awarded a place on a Jersey Overseas Aid project to help build a school.

While I was there, I started to think about where all the aid money was going and why it didn't seem to be particularly effective. I began to look at the practical side of conservation and development efforts, when previously my interest had been primarily in wildlife – the kind of stuff you saw on David Attenborough's shows and other TV programmes. In 1995 I went back to Africa to help build a hospital in Uganda. By then I was really quite captivated by this and I knew it was something I wanted to be involved in.

Below
In Kenya, Save The Elephants are using GPS/GSM collars to track elephants





*Above
Preparing a
conservation plan
in Kenya*

What was your next move?

I left my job in Jersey in 1996 to go to the University of Sussex to pursue a degree in Social Anthropology with Development Studies. I sold everything I owned at that point and left for the UK with two suitcases. That was the beginning of the journey. I formed *kiwanja.net* in 2003 after I returned from a year working with primates in Nigeria.

What do you offer through *kiwanja.net*?

kiwanja.net helps local, national and international non-profit organisations make better use of information and communications technology in their work. The website works as an information resource, while I generally function as an intermediary between the technology – especially mobile technology – and conservation or development groups. You'll see organisations like the Gates Foundation looking at technology use in developing countries. I help put them in contact with people in the field as well as some of the technology and applications under development, and help check their work and assumptions. Part of what I do is match-making in a sense. I have also developed mobile applications for use in conservation and development, including *FrontlineSMS* – a messaging hub used to monitor the recent Nigerian elections.

What advantages do mobile technologies offer for conservation and development groups?

While large numbers of organisations have been trying to promote the spread of the Internet in rural parts of developing countries, penetration rates are still pretty low in many areas. Mobile phones, however, have been spreading rapidly and today are nearly everywhere in some countries, leapfrogging the number of land lines in a matter of three or four years.

Because of their widespread adoption, we are now seeing mobile phones being used for many conservation and development applications. Many centre around improving communication between stakeholders and NGOs – for example, sending out alerts on impending natural disasters like tsunamis and hurricanes, or wildlife alerts, or posting job openings or health messages. The advantages of text messaging is that it is very quick, generally cheap, and direct. Most people read the text messages they receive, unlike email spam. It also works on every phone regardless of form factor – a critical issue in areas where a lot of the phones can be as much as seven years old. These phones are often useless for surfing the Internet but they work fine for SMS.

As for conservation applications, I focus on the improved communication capabilities. Unlike

in the past, where you had government agencies evicting people from their land in order to set up protected areas, today it is realised that conservation efforts must involve local people. Otherwise, you only disenfranchise them and drive them to oppose conservation efforts. Now with the rise of community-based conservation and integrated conservation and development projects, communication can help reduce these issues – mobile phones allow us to open channels that were never before possible. For example, in Kruger National Park (South Africa), the park management used to send a Land Rover out to the 18 different communities living around the park to inform them of meetings, give them latest news, and so on. If a meeting was cancelled or changed, the ranger had to go back out. It might take days to spread the word. Today it is possible to simply broadcast a text message. We can even set up a database that captures text responses from various communities on whether they will be able to attend or how they would vote on a particular initiative. This functionality frees up a lot of resources for more meaningful and productive activities from both the park's and the communities' perspective.

It sounds like most of these applications are top-down approaches. Are there examples of user-generated content?

Definitely, but it's in the early stages in many cases. The release of my 'FrontlineSMS' system is an attempt to bring the technology into hands of the users, and to promote a more bottom-up approach. In terms of user-generated content, current 'hot' applications include SMS blogging, which really blossomed during last year's Israel-Lebanon conflict. We saw news being generated by SMS messaging as Beirut was getting bombed. The real-time nature of the posts provided insights into what was really happening on the ground. This type of reporting – citizen journalism – is very much technology driven and the BBC, for example, regularly requests people near the thick of the action, particularly with camera-phone images or mobile video, to send them in.

From a conservation perspective, mobile phones are increasingly used for surveys and monitoring. In Kenya, for example, Save The Elephants are using GPS/GSM collars to track elephants (these devices text in the elephants' location). Compared to the alternatives, it's cheap, real-time, and doesn't depend on ARGOS satellites which drive up complexity and costs. These devices not only help the organisation to understand how elephants use their environments, but also provide farmers and villagers with an early-warning system so they can protect crops from being eaten and trampled. Human-elephant conflict is still a big issue in many countries.

In what other ways can SMS and mobile telephony be used in development?

In Nigeria and India we are seeing government agencies and NGOs use SMS as a health education messaging application. There are also groups using mobiles and mobile networks for disease surveillance. What just a few years ago took three months to report is now almost instantaneous. Spreading the word of outbreaks in remote areas saves lives.

One interesting health application is the SIMpill, which helps with the problem of people not finishing their course of antibiotics and so producing drug-resistant strains that are more difficult to treat. SIMpill is an SMS-enabled pill bottle which, when opened, delivers a text message to a central server. Each SMS is time stamped and kept as a record of the patient taking their medication. The doctor is warned via text message if the patient is not taking their medication properly.

We are also seeing SMS used in both fundraising and awareness-raising campaigns and for more conservation-specific applications.

One project I was heavily involved in was 'wildlive!', a service that promoted global conservation by providing news and information on various issues through peoples' handsets. It also had a direct fundraising angle through the sale of conservation-themed wallpapers, ring tones and games. Funds raised went to Fauna & Flora International, a UK-based organisation, and directly to the conservation projects being promoted.



Above
Ken Banks in Mana Pools, Zimbabwe

Right
Kruger National Park, where mobile technology is supporting local community relations



What are the biggest challenges to your work?

The big problem I see is that people are generally reluctant to share.

It's hard to find examples of mobile phone applications for conservation so you see a lot of wheel-spinning and duplication. The mobile phone is being touted as the device that will bridge the digital divide, so there should be more collaboration between organisations trying to address these important issues.

How many 'ICT for development' portals do we need? Rather than 'going it alone', I think people's first instincts should be to look at collaboration wherever possible.

This feature is based on extracts from an interview with **Mongabay.com**. For a full version of the original interview, please visit: http://news.mongabay.com/2007/0415-banks_interview.html

Further information on Ken's work can be found online at: www.kiwanja.net