

Where walkie-talkies dare

Ken Banks, IDG News

What happens when a rural farmer needs to arrange transport to get their produce to market? Or a healthcare worker wants to check the availability of a drug in a nearby clinic? Or a trader wants to find out the price of a commodity in a nearby store? Or a person needs to get in touch with a nearby family member in an emergency? Right now, in almost all cases, they'd either jump on a bike, run, send someone else to do it, not bother, or reach for their mobile phone.

When we think about rural telecommunication we almost always – by default – think of the mobile phone. And why shouldn't we? It feels like mobiles are everywhere, and they're highly regarded, particularly among the international development community who see them as the one tool with the best chance of closing the digital divide. So the focus on mobile technology continues to grow at an unprecedented rate, almost to the point where little other wireless technology is considered. If there isn't mobile coverage in an area then little appears possible. WiMax is still a dream, so move on.

When we think about appropriate technology much has to do with context, in particular that of the users. While mobile technology may have the ability to connect remote villages to the outside world, does everything they do need such wide connectivity? I've been puzzling over this one for quite some time. In almost all of the examples above, the communication need is a local one, from one side of the village to another, from the outskirts of a village to a farm, or from one market to the next. You don't need a mobile to do that.

Take this example. Imagine, say, 75% of a rural community's communication needs were local, in other words among itself, and most of that community lived in, say, a ten or fifteen square kilometre area. You could argue that a for-profit mobile network, likely running off a diesel-powered tower, is an inappropriate and over-the-top technology solution when other technologies already exist which could do the job, technologies which don't operate on a pay-per-use basis, and which don't need costly infrastructure to work.

Does such a technology exist? Well, yes. I'm talking walkie-talkies, of course.

Mobile phones and two-way radios have a lot more in common than you might think. In fact, mobiles **are** just glorified radios. It was the advent of the cellular system –which broke up large areas into smaller and more manageable 'cells' – which paved the way for the mobile technology boom. All a mobile phone has to do to function is communicate with the nearest tower, which in turn connects with other cells and the wider network. Depending on the landscape, a typical cell tower can cover an area of approximately 20 square kilometres, meaning a low power transmitter in the phone is enough to connect you to anywhere in the world. Good news all round.

Walkie-talkies, however, don't need towers. They communicate between each other directly. Although this can drastically reduce their range, some of the better models are able to operate in an area not that much smaller than a single mobile cell. On top of that, you can pick up a used walkie-talkie for around the same price as a mobile phone, and once you own one there are no call costs. For a small village with no mobile network, and little chance of getting one any time soon, walkie-talkies might provide a perfectly usable communications network while they wait for the real thing to arrive. Maybe in some cases they'd never need the real thing?

Of course there are problems with this model. Depending on which devices you use, it can be difficult or almost impossible to direct a 'call' to a specific individual. Privacy is a huge challenge, too, and walkie-talkies generally have a battery life of a day or less. But with a little imagination I think this could work. Right now, a trader's co-operative in a rural village could easily equip themselves with walkie-talkies and exchange information on commodity prices and produce availability. Healthcare workers covering the village and nearby area could use them to communicate, and technically co-ordinate a healthcare delivery network. And why not have Village Phone Operators (VPOs) with walkie-talkies rather than mobile phones, who can sell the use of their devices for a small fee, with a near 100% profit margin? Maybe this is the new model Grameen Phone are looking for?

Despite the meteoric rise of the mobile phone, large swathes of some of the more remote communities in much of the developing world remain disconnected – not just from us, but also from each other. While mobile technology may be the ultimate solution, many stand little chance of getting on the radar of the mdev ("mobile for development") community until a tower appears in somewhere in the village. This could be a mistake.

Appropriate technology is sometimes also called 'intermediate technology'. In this case, while communities wait for the arrival of the likes of Zain, MTN and Vodacom, an intermediate solution is just what the walkie-talkie could turn out to be.

Ken Banks, founder of kiwanja.net, devotes himself to the application of mobile technology for positive social and environmental change in the developing world, and has spent the last 15 years working on projects in Africa. Recently, his research resulted in the development of FrontlineSMS, a field communication system designed to empower grassroots non-profit organisations. Ken graduated from Sussex University with honours in Social Anthropology with Development Studies and is currently working on a number of mobile projects funded by the Hewlett Foundation. Ken was awarded a Reuters Digital Vision Fellowship in 2006, and named a Pop!Tech Social Innovation Fellow in 2008. Further details of Ken's wider work are available on his website at www.kiwanja.net