

MOBILES FOR DEVELOPMENT



**How mobile technologies can
enhance Plan and partners
work in Africa**

Guide prepared for Plan
by Hannah Beardon
January 2009

Table of Contents

Acknowledgements.....	1
Introduction.....	1
1 - Mobile technologies in Africa: the basis for a communications revolution	3
The unique significance of mobiles in Africa	3
Mobile technologies for social development.....	4
1. <i>Connecting Communities</i>	4
2. <i>NGO programme work</i>	6
3. <i>Rights-based development work</i>	10
4. <i>Organisational effectiveness</i>	12
2 - Using mobiles effectively in Plan's work	15
A three-stage process for using mobile technologies effectively.....	15
Stage One: Understanding the need and potential.....	15
1. <i>Identifying the role of information and communication in Plan's work</i>	16
2. <i>Mapping and planning information flows</i>	18
Stage Two: Understanding the social and technical context for mobile use.....	20
1. <i>Understanding the social context</i>	20
2. <i>Mapping the technical context</i>	21
Stage Three: Choosing the technology and content.....	23
1. <i>Identifying technical components</i>	23
2. <i>Ensuring relevant content and capacity</i>	28
3 - Lessons learned and issues to consider	31
The limits and limitations of (mobile) technology	31
1. The social and political void	31
2. Legality, confidentiality and security	32
3. Sustainability issues: time, scale and linkages	32
4. Estimating the costs	33
5. Evaluating the impact of mobiles	33
Over to you: looking forward.....	33
4 - Appendices.....	35
Appendix One: Selected links and references	35
General issues.....	35
Database of projects using mobiles for social change/advocacy.....	35
How-To Guides.....	36
Appendix Two: Selected projects and contacts	37

Acknowledgements

The author would like to thank all those practitioners who shared their insights and experience for the guide, including Peter Benjamin from Cell-Life, Juliana Rotich from Ushahidi, Ken Banks from FrontlineSMS, Holly Ladd and Andrew Sideman from AEF Satelife, and Avis Momeni from Protégé QV. Thanks also to Amer Jabry and Pete Cranston for their insightful comments, suggestions and help in pulling it all together.

Acknowledgement is also due to those organisations and networks who have collated and contributed such useful collections of information, references and advice, in particular the Tactical Tech mobiles-in-a-box toolkit, on which much of the technical information in this guide is based.

Introduction

The ubiquity of the mobile phone in Africa, the accessibility, the usability and crucially, the bottom-up nature of its growth, has challenged the traditional ICT for development analysis. People with very little income are prioritising mobile phones and airtime, clearly convinced of the value to their lives and livelihoods. People who are traditionally the targets of development aid are mobilising themselves not only to access mobile phones but innovate new functions and applications which meet their particular needs.¹

But beyond the excitement about the potential for mobile phones some voices of caution are emerging, highlighting gender differences in access and control, for example, or the tendency for social and economic hierarchies to be reinforced. There is also recognition that the value of projects using mobile phones, as with any other ICT, can only be as strong as the quality and appropriateness of the content shared.

There are several examples of pilots and services using mobiles for development or social change in Africa, though the group of champions is still fairly small. However, a review of the literature shows some unique and powerful factors which point to mobiles as a key tool in enhancing the communication capacity and information access of poor and marginalised communities across Africa. Most of the projects and pilots that do exist grew out of creative and innovative processes of matching opportunities to needs, so it seems that an understanding of what mobiles can do, and a review of the types of support and advice out there for people wanting to use them, could really enhance planning of all types of development activities and relationships.

Given this situation, Plan Finland commissioned this research into the potential value of mobile technologies to the type of child-centred community development work to which they are committed. While the nature, scope and scale of any work involving mobile technologies will depend entirely on the context, stakeholders and development objectives, this guide provides:

- an overview of relevant and innovative examples of how mobile telephones have been successfully integrated into development projects and processes; and
- a three stage process to help Plan staff and other development practitioners identify the key social, economic and technical factors and issues they need to consider when planning to use mobile technologies.

The information provided and analysed here is derived from a literature review and interviews with people in the field. A list references is provided at the end of this guide. It is hoped that this blend of examples, learnings and reflections will support Plan's staff and partners to make well-informed decisions about integrating mobile technologies into their work.

1/ See Jan Chipchase or Jonathan Donner's work about innovative uses of the mobile phone, such as Sente in Uganda, whereby people send money to their relatives by transferring airtime via village phone rental operators, or beeping, whereby people leave a missed call for a relative to call them back.





1 • Mobile technologies in Africa: the basis for a communications revolution

“The story of African telecommunications is undoubtedly mobile.”²

Reports on mobile technologies in Africa display an impressive array of statistics to illustrate the incredibly rapid growth of the market: in terms of the number of mobile subscribers, spread of network coverage, or growth in mobile based small enterprise and services³. As markets for basic mobile subscription have approximated saturation point in other regions, Africa has come to attention as the world’s fastest growing mobile market with new users getting connected at a rapid pace. Those who live in or visit Africa don’t need statistics to prove the pervasiveness and importance of the mobile phone, not just to the wealthy and well-connected, but in rural areas and marginalised communities too. But an examination of the current African context shows that there is potential for the impact of these technologies to go much deeper, as new content and applications are developed for those on the margins of market influence.

The unique significance of mobiles in Africa

Peter Benjamin of South African non-profit Cell-life, which develops mobile-based HIV and AIDS services, points out that the significance of the spread of mobile technologies in Africa is distinct from Europe and the US, where they are generally used to substitute landlines and, less frequently, computers. In Africa, the cell-phone is usually the first telecoms connection people have ever had access to, opening up new opportunities that previously were just not there. For example, in Uganda, *“there were only 55,000 telephones in 1995, one for every 400 citizens, and the fixed phone network barely reached into rural areas. By the end of 2006, Uganda had more than 2,700,000 telephone subscribers, over 95% of them with mobile phones.”*⁴ This has obvious benefits for previously unconnected phone users, and also for those such as Plan who are working with and for them. *“Cell-phones are the way to reach the majority,”* Peter Benjamin stated, primarily as basic telephony and text messaging devices, but increasingly as a point of access to the internet and related services. *“In South Africa, 80% of internet access is through a cell-phone.”*

Box 1: What a mobile can do

A cell phone is basically a complex radio, and depending on the model, the network and the applications installed it is capable of a variety of tasks. Some of the key functions and applications of mobile phones, over and above telephone calling:

- To store contact information, make lists, keep track of appointments and set reminders;
- As a clock or a calculator;
- To shoot photographs, videos or audio clips;
- To send and receive text, images or multimedia messages;
- To send or receive e-mail or upload and download information on the Internet;
- To play games, chat via instant messaging or browse social networking sites;
- To watch TV or listen to the radio or stored music;
- As a satellite navigation device to find your way or locate others;

^{2/} *The un-wired continent: Africa’s mobile success story.* Vanessa Gray, ITU 2006
http://www.itu.int/ITU-D/ict/statistics/at_glance/Africa_EE2006_e.pdf

^{3/} See for example the African Mobile Factbook 2008 www.africatelecomsnews.com/, or the statistics available on <http://cellular.co.za/stats/stats-africa.htm>, or www.internetworldstats.com/stats1.htm

^{4/} From the “Case for Communications.” a note for Plan prepared by Professor David Souter, 2007.

As well as the distinct significance of the availability of mobile phones in Africa, the patterns of ownership and use are also important to understand. Unlike many other regions of the world, many handsets in Africa are for shared use, either as a public good or private enterprise. Issues of cost, literacy and culture have intertwined to create a distinct context for mobile phone ownership, use and application.



A Vodafone report on mobile phones in Africa⁵ highlights the importance of recognising different usage patterns, and the value attached to mobile phones in Africa, in order to create appropriate policy or programming. Neil Gough writes in the introduction to the report:

“More attention should be paid to the characteristics of how people actually do use phones in the developing world in policy debates on increasing access to Information and Communication Technology (ICT). It is wrong to simply extrapolate our developed world models of needs and usage patterns to poorer nations. Understanding the context is vital.”

As an example, he notes that while in the UK nearly double the amount of SMS are sent compared to voice calls, in South Africa the trend is the opposite, with three times the amount of voice to text in general and 13 times more voice for rural areas. This makes sense, he argues, when considering that these are multilingual communities with high levels of illiteracy. He concludes that *“debates on ICT policy are not sufficiently informed by this type of evidence.”* Other distinct characteristics of the African market are the reliance on prepaid credit, and in particular top-ups of very small amounts, and the tendency to share credit or use missed calls to ensure that the wealthier correspondent picks up the tab.

Of course, each African context is different with different patterns of ownership and usage, and different types of intermediaries to operate and provide access to mobiles. These are important dimensions to the planning of any intervention using mobile technologies, and have implications for issues such as confidentiality and the participation of women and children. In particular, the role of intermediaries, whether in the form of community figures, private enterprise or public services, is important to consider as a building block to facilitate and broaden participation in a range of processes. Several reports, including the Vodafone survey on mobile phone use in Tanzania which is included in the aforementioned report, show that mobiles strengthen social capital, particularly where their use is shared.

Mobile technologies for social development

“The mobile technology explosion has led, for the first time in history, to there being an interactive electronic tool in the hands of literally the majority of people in the world.”⁶

The impact of this for Plan and partners is potentially revolutionary and transformative. If previous attempts to add value to development processes through ICT have failed to live up to expectations, it has been due to the lack of capacity to own, use and innovate with the technologies. If people are choosing to own and use mobile phones, this means that they are connected to the same networks as their peers, colleagues or duty bearers, and to the media such as internet, radio or the press which can further extend their information, audience and influence. Considering this adaptability, applicability and accessibility, there is a great chance for mobiles to add value to the development process in a scalable and sustainable way. In terms of Plan’s work, the context for understanding the potential for mobile technologies can be understood in four areas: Connecting communities; NGO programme work; Rights-based development work; and organisational effectiveness. These areas are explored further below:

1. Connecting Communities

Mobile phones have an immediate, and striking, impact at family and community level, connecting people for personal, business or community reasons. They can save people time and money, facilitating efficient transactions and cutting down on travel.

Where migration is common, they allow families to stay in touch, strengthening social ties and ensuring timely support in times of difficulty or crisis. Other uses have arisen from different circumstances: village women selling airtime to supplement their income, search and rescue in emergencies, or financial and logistical support during times of violence and instability. As the majority of people in rural Africa are not in formal employment, the mobile phone can facilitate important contact with employers or buyers, and many social development organisations are working on providing relevant local content to support these livelihoods.

5/ Africa: The Impact of Mobile Phones. The Vodafone Policy Paper Series • Number 3 • March 2005 http://www.vodafone.com/start/responsibility/our_social_economic/access_to_communications/sim_research/impact_of_mobile_phones.html

6/ From the Open Mobile Consortium draft concept note, 2008. This new group is collaborating to support social change organisations through development of open source mobile tools, training and support. Their vision is that organisations will be able to develop their own applications without the need for technical consultants.



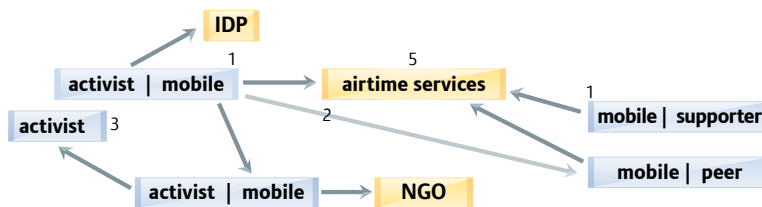
The mobile phone appears to be less intimidating than other modern technologies, allowing people to apply their creativity and skills to develop innovative uses and applications in order to meet their information and communication needs whatever the context. Whereas other technologies may be adopted more quickly and easily by younger people, or more educated or confident people, there are many reports of users of all ages enthusiastically adopting mobile phone applications and uses.⁷

This type of use of mobile phones in communities provides the backbone for any planning and programming Plan does with mobile technologies. This type of use is organic and endogenous; it builds the basic capacity and responds to the basic needs of communities. An understanding of how communities have used mobile phones to connect with each other and strengthen their development initiatives, will allow Plan to identify and build on local needs, priorities, preferences and capabilities.

Box 2 - Mobiles for solidarity: Kenyan post-election responses

As the contested results of the Kenyan election in 2008 were reported, many people found themselves caught up in the violence which began to break out between political and tribal groups. A combination of factors – the need for people to contact friends and relatives, to arrange meetings and to monitor and alert authorities to violence – led to some innovative uses of mobile phones which have since set the precedent for emergency response or crowdsourcing applications and systems. The most famous example of using mobiles to monitor and alert to violence is Ushahidi, which mapped SMS alerts onto e.g. Google maps on a website to show the spread of violence and alert others on the ground. www.usahidi.com.

Pyramid for Peace: In a perfect example of necessity being the mother of invention, Kenyan peace activists turned to their mobiles to support each other with ideas, back up and mobilise and distribute funding from international supporters during the crisis in Kenya. International supporters and friends provided airtime credit to activists (1), which enabled them to use their phones to notify agencies such as the Red Cross of the situation on the ground(2), coordinate activities (3), provide information and support for displaced people (4), share ideas and news with peers around the world (5) and maintain communication across tribal barriers. Some of the activists were able to use these funds to pass credit on to peers of the violent groups who were committed to peace, to send messages of peace and reconciliation to those who were spreading the violence. One of their supporters illustrated how mobiles added value to pockets of work for peace: *“We can call, we can talk, we can give, we can donate. We can accept the challenge to encourage the Kalerjins and Luos and others to free the roads and celebrate the calm. We can re-establish Nakuru as a haven for dialogue.”*



Activists use their mobiles to connect them to supporters, peers and humanitarian agencies, and to transfer funds.

Questions for reflection:

- How could such a system benefit from formal coordination?
- Have mobiles been used to build social capital in communities and networks you work with?
- What kinds of needs are you aware of which could be met through innovations such as these?

^{7/} For example, Holly Ladd of Satellife noted that of all the users they trained in the use of PDA only the most complicated of configuration tasks were beyond them, and despite the complications of using electronic devices to collect data they did not want to return to paper.



2. NGO programme work

Beyond the organic developments of applications for the mobile phone, numerous organisations and groups have been applying mobile technologies to support development processes in Africa. Mobile phones, as tools for communication and effective and timely dissemination of information, have real potential to strengthen the delivery, as well as the design and monitoring, of all Plan's programmes, particularly those in health, education, livelihoods and the environment, and emergency preparedness and response. Mobile phones can also play an innovative and yet largely unrealised role in strengthening relationships between stakeholders, from local to global levels.

To date, mobile phones have been used to support social development projects in three main ways: by providing public information services; by providing advice and support; and by assisting with project coordination, monitoring and data collection⁸. For example:

Providing information services

A key driver for development is to improve people's access to relevant and timely information. The most common areas for information provision via mobile phones are in health and livelihood.

The provision of information on health issues to the public via mobile phone ranges from targeted provision such as a question and answer service on water and sanitation issues created by NetWas in Uganda, or subscriber-based breast cancer information service provided by Mobile4Good in Kenya, Tanzania and Cameroon, to awareness raising activities such as the Freedom HIV AIDS game developed to reinforce messages about safe sex⁹. In Zimbabwe an interactive voice response system was set up by the civil society organisation Kubatana to disseminate sexual health information for teenagers from a website called Auntie Stella¹⁰.

Various other systems have been set up to allow health workers to access information relevant to their work, either on demand or by automatic download. For example, doctors in Uganda can browse medical texts via PDA (hand held computer), downloading weekly information bulletins to PDAs of field-level health workers through the Satellife programme, or in Malawi health workers can receive information on the side effects of specific drugs via SMS automatic response thanks to an innovation using FrontlineSMS.

There are also various subscription services which collect and disseminate relevant information to support the livelihood choices of poor people, either for a fee, or funded by sponsorship. Manobi's Xam Marse service in Senegal is one of the best known examples of this, providing market information for farmers and information on weather and tides for fishermen to the mobile phone. Others include Trade at Hand in Mali, Mozambique and Senegal and KACE in Kenya. Wougnet in Uganda have been working with Brosdi to support farmers and extension workers with information on pest control, crop choices as well as market prices and opportunities. Tradenet in Ghana connects buyers and sellers and provides market information in four languages. Farm Africa in Kenya run a project which uses mobile phones to connect livestock farmers with veterinary advisers, and One World run Kibera, a service providing jobs notification to subscribers in Kenya.

Advice and support

While access to subscription information sources can be very useful and even transform business or farming practices, many people in rural communities rely on personal relationships with local information sources or advisers to provide relevant local content. Local trusted services such as agricultural extension workers, health visitors or CBOs provide people with the information they rely on to support their quality of life, livelihoods and access to rights. Mobile phones can facilitate and enhance these types of connections, and also support and strengthen networks of peers and colleagues.

For example, Farm Africa integrated mobile phones into a project linking livestock farmers to veterinary experts in Kenya. In South Africa, where networks allow instant messaging by mobile phone and individual ownership is higher than other African countries, a research project MobilEd has piloted an audio wikipedia to allow children to access audio encyclopaedic articles via SMS, and another pilot offering maths homework support via Mixit mobile chat platform.

8/ For further examples, refer to online databases: www.shareideas.org, www.mobileactive.org and www.kiwanja.net

9/ E.g. <http://www.freedomhiv aids.in/AfricaProgram.htm>

10/ www.auntiestella.org



Also in South Africa, Cell-life are using instant messaging software to enable a peer support and counselling group for positive living, as well as other programmes for people living with HIV and AIDS including SMS reminders for drug adherence or clinic appointments.

Box 3: Supporting informed decision making - Manobi in Senegal

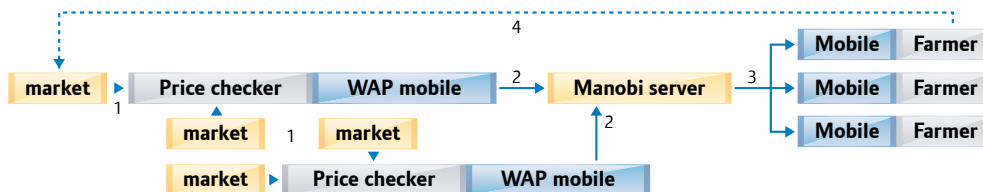
“Manobi transforms a farmer’s mobile phone into an effective communication tool which allows him to operate in real time with a European or American importer.” Manobi website

Farmers in Senegal, like much of rural Africa, face a problem which seriously affects their livelihoods yet could be transformed by the application of strong communication mechanisms, exactly what the non-profit company Manobi are doing in Senegal. Isolated from the main markets, poor farmers have little bargaining power with traders who buy and market their crops. Without good information on the prices and availability of their crops in different markets they are bound either to accept the low prices of traders who travel to their villages or to spend money and time travelling to central markets where they hope their crop will be receiving better prices. Even using their phones independently they can be given very low prices by market traders trying to cheat them, according to Manobi staff.

The service: In response to this problem, Manobi have developed a market information service to allow farmers to market their goods more actively. The service provides access to price data on different crops collected from different markets around the country by Manobi’s own price checkers (1) who upload the data to its central database (2) using mobile phones via WAP. Farmers receive the information on the crop they are interested in on their mobile phone (3), allowing them to make decisions about where to sell (4), who to sell to, or even when to harvest.

The system: Manobi have had to develop new applications, based on open source software, adapted to the needs of its users at the lowest cost to allow data access over existing voice infrastructures. Their service is available through a variety of different connections (GSM, WAP, HTTP, voice) and the content is structured in XML/XSL standards, allowing for users to access data through any type of terminal and network.

Price checkers upload current information to the Manobi server via WAP phones, which is then accessed by users



Impacts: Although many of the farmers using the system are illiterate, they are familiar with a calculator and treat a phone in the same way. One farmer using Manobi’s service found that he could get more than twice as much for grapefruit than he was offered by the middlemen. Manager Daniel Annerose noted that access to the service makes farmers more aware of the dynamic nature of prices – they are not stable but change quite quickly. This in turn builds their capacity to use the price data more effectively. Furthermore, Manobi hope that the popularity of their service will encourage mobile operators to expand their services further into rural areas.

Question for reflection:

- Could farmers use their mobile phones to improve their income without such a service? How?
- Could a similar system be useful to support health decisions? Could such a service be adapted to support education and learning? What other areas of your work might it be adapted to?
- How can you ensure that content is reliable, relevant and timely?

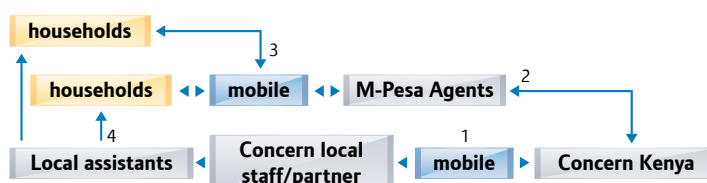
Box 4: Cash transfer in emergencies - Concern in Kenya

“The M-Pesa system is particularly attractive in that it offers a solution to one of the biggest problems facing NGOs involved in cash transfers – that of ensuring security of cash while being counted and transported.”

Concern Kenya operated emergency cash transfer via M-Pesa as an emergency response to offer immediate livelihood relief to households affected by post-election violence in Kerio valley in 2008, and was also an opportunity to test how private sector mobile banking services could be involved in humanitarian work. Target areas and households were selected on the basis of discussions with local leaders, and the amounts calculated to cover 50% of household food needs based on surveys of local food prices and transport costs. Mobile phones were, of course, essential in gathering and sharing this data. (1)

The system: The transfers were made using M-Pesa system which allows cash to be sent over the Safaricom network without need for a bank account. To send cash via M-Pesa (2), users need to register with M-Pesa agents and have the service activated on their SIM card and installed on their phone. A flat fee is charged for each transfer. Registered users can withdraw the cash or keep it in their M-Pesa account to buy airtime or send on to others. Recipients who are not registered can claim their cash from M-Pesa agents using the special code sent by SMS and producing acceptable identification (3).

To make the system work, Concern provided registered SIM cards to beneficiaries and paid local people to assist beneficiaries in receiving the transfers (4). For the more than half of target households who didn't own phones, Concern also provided shared handsets and solar chargers. Another logistical problem was the safe transport and distribution of the cash, especially during such times of civil unrest. Once the basic elements were in place, Concern was able to transfer cash directly to the hands of the target beneficiaries. The local police station was used as the distribution point offering security and good network coverage.



Concern use mobiles both to gather information from the ground, and transfer funds via M-Pesa

Impacts: The report pointed out that as well as providing a good logistical solution, the use of mobiles as a transfer mechanism had empowering element: *“The use of a process which required beneficiaries to interact with new technology transformed them from benign recipients of aid to the active participants in a process. The provision of phones, SIM cards and chargers also gave recipients an opportunity for communication that they had never experienced before.”*

Questions for reflection:

- What value does the mobile phone add to this emergency relief programme?
- In what circumstances might you need to transfer cash in the course of your work?
- What effect would the use of mobile banking have on issues of accountability or monitoring of funds? How might this be dealt with?

11/ Diane Coyle states in her 2005 report for the GSM Association: “... the timely spread of reliable information is a vital part of the response to and recovery from a disaster. The nature of communications needs differs at different stages of a disaster, however. The contribution of mobiles (and other forms of communication) varies correspondingly.”



Coordination, monitoring and data collection

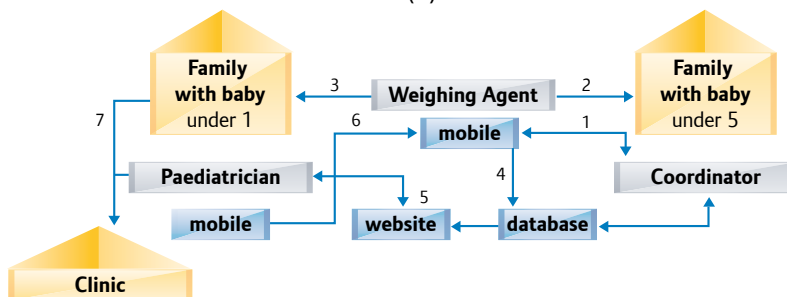
In times of emergency, crisis and disaster, the mobile phone networks are often one of the most vital tools for rescue, relief and humanitarian assistance – for co-ordination, location of missing people and delivery of information and cash, but also for early warning and disaster preparedness. Many of the potential uses for mobile phones in delivering humanitarian assistance are discussed and analysed by Diane Coyle in her 2005 report for the GSM Association, “The Role of Mobiles in Disasters and Emergencies”¹¹. The report points out that mobile networks tend to be one of the first infrastructure elements to return to operation after disasters, and can therefore be significant in search and rescue, providing on the ground assessments, as well as contributions to early warning systems.

There are many examples of applications and systems developed to improve the efficiency and accuracy of public health administration, whether small scale projects for monitoring or data collection, or multi-functional systems. In Nairobi students have developed BloodBank SMS¹², a system which enables district hospitals to monitor and coordinate blood supplies. Other applications are used to collect data on the availability and use of insecticide-treated mosquito nets in Uganda through NetMark, or to support rural midwives in Northern Uganda with information and referrals with Rescuer.

Box 5: Monitoring child health - Pésinet in Mali

The Pésinet project in Mali deploys mobile technology to prevent infant sickness and mortality among low income families. Although basic, this system has been able to deliver real improvements to infant mortality indicators. Infant mortality indicators during a previous pilot project in Senegal fell from 123 per thousand to 5.3 per thousand. See www.alcatel-lucent.com

Members of the community are trained to be ‘Agents de Pesee’ (ADPs) to implement the project at community level and provided with Java enabled mobile phones. Every month ADPs, working with local midwives, identify and register low-income families with children under five, and pass their names to the project coordinator (1). Each child is weighed and monitored at home once a week (2), babies under one year old twice a week (3), and this data, along with other relevant symptoms, such as vomiting or diarrhoea, are transferred by the phone via GPRS to the project database (4). The database then alerts the project paediatrician to children who show significant weight loss or other risk factors (5). The doctor can examine the risk curves and send text messages to the ADP with the names of those children who need to be examined in person (6). The ADP can then inform the family and advise them to bring the child to the Pésinet centre for examination (7).



Mobiles, supported by an online database, allow efficient data sharing and analysis by health workers

Questions for reflection:

- What are the key elements in a system such as this? (Human, technological, institutional)
- What value does the mobile phone add to this public health system?
- To which of your priority themes or issues may this type of system be adaptable?

^{12/} The Blood bank SMS application was developed by students at Nairobi University as part of the EPROM international research project <http://eprom.mit.edu/research.html>,



Pésinet is a project in Mali using mobiles to improve the tracking of child weights, to enable prevention of child mortality, as described in Box 5 below. Another project looking at the use of mobile phones to improve the speed and quality of child nutrition monitoring is the RapidSMS Child Malnutrition Surveillance project. This is a collaboration between the School of International and Public Affairs at Columbia University and Unicef to develop an open source platform for mobile phones which will be piloted in Malawi in 2009. The pilot project will enable the Government of Malawi, UNICEF Malawi, and their partners to geographically map and track child malnutrition trends accurately and in real time. Nutritional data will be continuously transmitted from the field via SMS to government and UNICEF databases and indicators commuted automatically. Based on these indicators, instant feedback will be sent by SMS to health clinic workers, who can immediately share with mothers critical information and advice related to their children’s nutritional status.

An example of a broader data management system is a partnership between Satelife and the Ugandan health service, who have developed a system whereby field-level health workers input data into surveys on their PDAs and transmit it via a hub to district level thematic databases, while new information and survey questionnaires are automatically downloaded to the individuals PDAs. The system is able to analyse the data for disease trends, and create alerts for potential disease hotspots, for example.

Some gaps in the literature

The programme work presented here does not necessarily represent what is going on in Africa, but rather what has been well documented and shared. While there is a great concentration of documented projects in the areas of health and livelihood information, as well as with advocacy and campaigning (see following section), there does not seem to be so much being delivered in the fields of education or the environment, for example. This may be because of the demographic of phone owners in Africa, which is unlikely to include poor or rural children. There are many examples in Europe and the US, where school children tend to have their own mobile phones from a young age, and some pilots in South Africa. SMS applications developer Clickatell provided a list of the top ten uses of SMS in educational establishments in the US, which give an idea of possibilities, and include:

- notifications to students and parents
- timetables and exam results
- absenteeism alerts
- interdepartmental communication
- progress reports via SMS, and
- student reminders.

While there are some examples of the use of mobile technologies **for environmental issues**, mainly monitoring and lobbying or awareness-raising, this again is rarer in the African context. This may be because of the strong link between mobile phone use and livelihoods. However, ENDA in Senegal mentioned plans to use mobile technologies in developing and facilitating conversations with poor farmers around adaptation to climate change.

3. Rights-based development work

Like Plan, many development actors and international NGOs see rights as the basis for sustainable, community-driven development processes. There are many examples of organisations and networks using mobile technologies to enhance their rights-based work, from human rights monitoring; to lobbying and advocacy for the ratification of rights conventions; to using mobiles with other technologies like local radio for mass movements to strengthen peace and democracy. Examples of these include:

Box 6: Involving the public sector

Many of the existing projects using mobile phones are either within or have strong overlap with public health services. Both Cell-life and Satelife noted the importance of developing strong trusted relationships with the public sector both in terms of scale up and sustainability. Cell-life is exploring ethical sustainability business models which consider the public sector as a customer for their services, in particular the narrowcasting of the health messages and services. Satelife have a variety of implementation models: in Mozambique their programme was implemented with the ministries of health and technology, while in Uganda it was initially operated with university researchers and outside funding, but the ministry of health has come on board to scale up to new areas.

Human rights monitoring

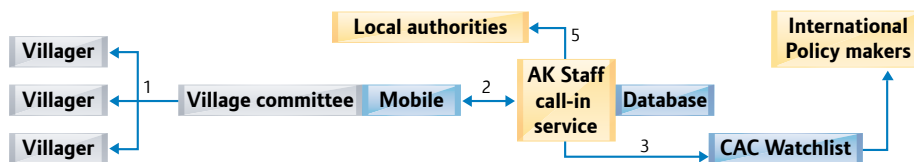
Organisations who work to support the rights of women, children and other vulnerable people have been quick to see the opportunities that widespread mobile phone access and coverage provide them and their networks. For example, in Kenya, Groots provided a focus for both reporting cases of attempted land-grabbing and knowledge sharing between elders on women’s property rights. The Egyptian Centre for Women’s Rights are implementing a programme to enable women to report cases of harassment on the streets by mobile phone, to support their awareness raising, sensitisation and advocacy work¹³. In the Democratic Republic of Congo, a network of community groups and human rights groups called Ajedi-Ka use mobile phones to report child rights violations (see Box 7).

During the violence and intimidation following the contested Kenyan election results various organisations developed coordinating systems to allow people to monitor and alert to incidents of violence. Ushahidi developed a website which could map these incidents and connect people. This open source software is now being applied elsewhere and developed to allow appropriation and adaptation by other organisations and networks.

Box 7: Protecting children in conflict - Ajedi-Ka in DRC

Tens of thousands of children in the Democratic Republic of Congo (DRC) have been forcibly recruited as soldiers by all parties to the conflict. In 2005 Ajedi-Ka, a national NGO working on child protection and reintegration of child soldiers, and the Watchlist on Children and Armed Conflict began work on a pilot project to use mobile phones for more efficient monitoring and reporting of child rights violations. Village child protection committees are established, recognised and respected groups, to whom villagers report violations directly (1).

System: Ajedi-Ka distributed mobile phones to child protection committees in high risk 15 villages and provided training for grassroots organisations and community members in child protection policies and instruments, and the use of the mobile phones for monitoring and reporting. The project established a 24 hour call-in service to enable committee members to report violations as soon as they occurred and discuss further action (2). The programme also included the development of software enabling staff to record reported violations securely and confidentially even on shared computers. Once violations are logged in the system, staff decide whether further verification or information is needed in order to document the case. Then detailed information on fully verified cases can be shared with the CAC Watchlist headquarters in New York (3) which maintains a secure database from which to inform international policy, including the UN Security Council, about the state of violations against children’s rights in the conflict in eastern DRC (4). In addition, Ajedi-Ka was able to quickly refer each of the verified cases to the appropriate local authorities (5) and to provide practical recommendations for timely responses to the violations.



Village committees use mobile phones to report and verify cases of child rights violations

Impact: As a result of this project, 22 new cases of violations against children were reported to Ajedi-Ka and 15 were fully verified from May to November 2005. While the evaluation showed that the pilot project succeeded in facilitating timely reporting of violations and facilitating the flow of information to the international level, resources did not stretch to follow up of cases reported to the local authorities. Furthermore, infrastructure issues caused problems for charging phones and transferring information to New York.

Questions for reflection:

- What role do mobiles play in a monitoring system such as this?
- Would it work without mobiles?
- What additional considerations or complications does the use of mobiles bring?

SMS lobbying and advocacy

MobileActive and Tactical Tech are international groups supporting practitioners using mobiles for advocacy and campaigning work and have both produced guides to using mobile phones for advocacy and lobbying, which include case studies as well as practical tips and tools. One example in the field of human rights is the campaign by Wougnet in Uganda to get people to send text messages to their MPs to support the parliamentary bill on women's land rights. Another famous example is the petition for ratification by all African countries of the AU protocol on human rights, which had an option to sign by SMS. Fahamu coordinated this action, and have some critical insights into the value of SMS to this type of campaigning, as discussed below.

Pluralizing the media and localising politics

Political groups and movements in many countries are coordinated entirely on mobile thus empowering citizens to mobilise, coordinate and generate change at the grass-roots level. During the Nigerian elections a team of NGOs created the Network of Mobile Election Monitors to allow ordinary citizens to monitor the elections and feedback their observations via SMS to a central computer hub, accessed by other monitoring groups and authorities including the EU.

In countries with strong government control of the media, and during periods of intense political activity, NGOs and citizen's media organisations have used the mobile phone, often in convergence with radio and the internet, to provide a fuller or more diverse picture than that given by official sources. For example, UK Based radio station SW Radio developed an SMS service to send news headlines to mobile phone subscribers in Zimbabwe, and Kubatana.net used Frontline SMS to send election news to subscribers, coordinate campaigns for a free Zimbabwe and facilitate conversations between members.

The convergence between community radio and mobile phones is perhaps more organic and therefore less visible in reports which focus on international pilots and programmes. However, many commentators note the potential power of the combination of these two pervasive and accessible media. Some of the common ways they interact include:

- Using SMS to *transmit* important up to date information to be broadcast on radios during emergencies, for search and rescue, reunification, alerts and early warnings etc. This is valid both for natural and political emergencies. For example, SW Radio was able to collect mobile numbers of listeners' family members in Zimbabwe and send headlines direct to their mobiles.
- Providing a communication channel for listeners to *contribute* news, views, stories and feedback.
- Sending messages to listeners or subscribers' mobiles *advising* them of special programmes or events.
- Keyword *responses*, where listeners are invited to text with words such as leisure, news, weather, travel etc and get automated replies with the latest information.

4. Organisational effectiveness

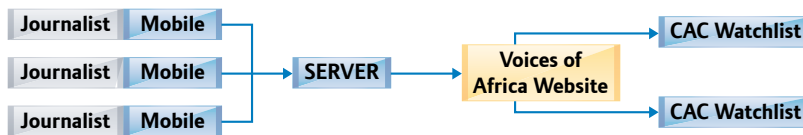
The wealth of knowledge and information that a development organisation generates and uses needs to be documented, shared and communicated effectively in order to improve effectiveness. Components of a quality needs assessment, planning, reporting, or monitoring system are already practiced in various projects using mobile phones. For example, in Brazil, slum dwellers have been using mobile phones to report on problems and issues they see as priority in their communities, and in emergencies mobile phones have been used to text needs assessments from the ground to central coordinators. In other projects mobile based systems are used to collect and analyse data for monitoring of indicators. Despite this clear role for timely and effective communication, and the existence of uses and applications for mobile phones which fit the reporting, coordination and communication needs of organisational effectiveness, there is little evidence of mobile phones being systematically applied to improving organisational effectiveness and efficiency in communications at any level.



Box 8: Citizens reporting for Plan

One area where mobiles have strong potential to improve or strengthen internal effectiveness and decision making, whether in terms of needs assessments, evaluations and monitoring, or building relationships through development education or sponsor communications, is in citizens' reporting. Equally, this type of community-driven communication and reporting can be an integral part of rights-based programming and advocacy work. It is clear that a tool such as the mobile phone, many of which are capable of capturing audio and video, in the hands of the children, families and communities with whom Plan work, could increase the potential for diverse views and perspectives to be included in routine internal processes, and for more direct and organic communication between different stakeholders. Olivier Ndikumana, a community media expert in Rwanda, reports that in local video trainings he facilitated: *"with five phones we produced 15 films in 7 days."* A review of current projects using mobile technology in Africa shows that this potential is largely untapped as yet, although there are some interesting examples such as mobile reporters in Ghana, Mozambique and Kenya supported by the Voices of Africa project (see www.africanews.com).

The system: Voices of Africa train people to use their mobiles to report on local events and news and upload these reports via audio, text or video onto their website (1). They see the importance of training people to take advantage of the opportunity that these technologies provide for Africans to *"to take part in discussions that have been taking place about their continent for centuries without their knowledge and participation"*, which in turn can reinforce democracy, good governance and the rule of law. The project aims to support Africans to use blogging and reporting technologies, with skills training, coaching, high tech mobile handsets with foldable keyboards and software which allows direct uploads via the dedicated server to the Africa Interactive website for publication (1). It is hoped that those stories and images will then trigger reactions from users and community members (2), and provide an alternative view of African current affairs.



Trained reporters use mobile phones to record and upload video, audio and text reports to a public website.

Questions for reflection:

- How might the video diaries or text blogs of community members or other stakeholders strengthen your planning or accountability?
- In what areas of cultural or political life do the people you work with (wish to) participate?



2 • Using mobiles effectively in Plan’s work

“Considering what Africa Interactive has been doing in other countries, there is no question about how mobile phones can be used to promote rights of children and further Plan’s goal of child centred community development”

Samuel Kissi, Curious Minds, Ghana

“Communication can enable poor people to move from being passive recipients of externally generated development interventions to being effective advocates for the enrichment of their own lives and, finally, generators of their own development.”

Rockefeller Foundation

A three-stage process for using mobile technologies effectively

While many reports point to the impacts of mobile phones on people’s livelihoods, security and well-being, it is important to state the obvious – that technologies and devices are just tools - the mobile phone is not in itself empowering. The impact depends on the way they are put to use, the content made available or the relationships facilitated. In other words, it is the information and communication, not the technology, which is at the heart of social change.

As the ideal use of mobile technologies will depend on the context, the aims and the resources available, there are no hard and fast answers to how useful they can be, or how they should be applied. This section of the guide provides some questions and ideas to support Plan staff to think through how mobile technologies might best support and enhance their work. These are split into three overarching and linked planning stages, as follows:

STAGE 1	STAGE 2	STAGE 3
<p>The need and potential for mobile technologies</p> <ul style="list-style-type: none"> Identify where information and communication play a role in your existing and planned work and the processes you wish to support Establish the directions of, and precedents for, the information flows you wish to facilitate 	<p>The socio-technical context for using mobiles</p> <ul style="list-style-type: none"> Identify social issues which may have an impact on communication effectiveness Analyse some of the barriers and opportunities for control, use and impact of mobile technologies in the context 	<p>Choosing the technology and content</p> <ul style="list-style-type: none"> Based on the prior analysis, identify the technical components which fit your aims, context and budget; Ensure relevant content and capacity exists to create the desired impact.

Stage One: Understanding the need and potential

“Information is power. It can generate positive social change, in particular building the confidence and status of marginalised groups such as women, children and the young. The combination of this inherent value of information with the adaptability which young people show with new technology gives ICTs real power to improve their lives.”¹⁴

Good access to relevant information sources and communications media can support people to make informed decisions about their own lives and livelihoods, and to participate in and influence decisions which affect them and their communities. Effective and good quality development processes are also built on strong communication and well managed information flows, to facilitate learning and sharing, networking and coordination. Furthermore, a focus on information and communication media and techniques can build local knowledge, identity and voice into a strong basis for equal development partnerships with a range of stakeholders, and at the broadest level enable connections to be made between local experiences and national and international policies and processes.

^{14/} David Souter, 'The Case for Communications' 2007 Plan International



The 2007 report giving the ‘Case for Communications’ for Plan stresses the importance of a realistic understanding of the local context, and the needs and concerns of the people living there, in order to be able to identify where technologies can make a contribution to well being, and choose the appropriate equipment and services. Only in this way, the report argues, can ICT be used effectively towards the social aims and objectives of Plan and partners. As Russell Southwood, commentator on ICT for Development issues states: *“It is not about technology, it is about what makes people’s lives easier.”* He quotes Mark Davies of Tradenet as saying: *“It’s all about understanding the agents of change and that’s anthropology not technology.”*¹⁵

A first step, therefore, in planning to take advantage of the potential and possibilities of mobile phones for community-centred development work is to identify the local needs, concerns, issues and processes where mobile technologies can add value.

1. IDENTIFYING THE ROLE OF INFORMATION AND COMMUNICATION IN PLAN’S WORK

An initial review of Plan’s objectives and activities at country level shows how integral information and communication is, whether in improving access to basic services, awareness of rights, participation in development, income opportunities, health and wellbeing or awareness of HIV and sexual health.

In terms of the framework given above, the value mobile technologies can add to areas of Plan’s work, may be:

Connecting communities

Plan’s work in communities usually involves the strengthening of local partnerships and community groups - work which can be greatly enhanced by the use of mobile technology. For example, mobile phones can be used to carry out payment transactions, to connect and communicate with members or peers, to share local information, coordinate activities or organise and publicise events.

Plan country strategy papers show a range of activities and strategies relating to linking communities, including: strengthening civil society organisations and developing community owned and driven networks; recording traditional knowledge and nurturing environmental consciousness; or supporting lifelong learning with training, information, facilitation of peer groups and forums. Mobile applications can be adapted to support these activities, for example by providing sources of relevant content, allowing peers to post and answer questions to each other or to experts, or to allow the transfer of data (and even money) between partners or colleagues.

Programming

Mobile technologies can be used to support and enhance the communication, coordination and sharing of information between Plan staff and other stakeholders in development (such as community groups, NGO partners, duty bearers, policy makers and service deliverers) in order to ensure appropriate and timely programme work. For example, mobile phones can be used to gather, consolidate and share information relating to the *design, monitoring and implementation* of projects and programmes; to *communicate programme goals and impacts* and build sponsorship and

Box 9: Questions for connecting communities

- Do elements of your work involve linking communities?
- Have mobiles made an impact on communications in the communities where you work?
- How might this impact on / improve the effectiveness of your work supporting community development?

Box 10: Questions to support programming

- What aspects of your programme work involve communication and / or information provision?
- What role do mobiles play (informally or strategically) in your programme work at present?
- How might their potential be leveraged to enhance the effectiveness or scope of your programme work?
- Are any of the examples from this guide inspiring or relevant?

15/ From *Balancing Act Africa*, a newsletter covering information on the telecoms, Internet and audio-visual media industries in Africa. www.balancingact-africa.com/news/back/balancing-act_427.html



funding relationships; and to support and facilitate *timely responses to emergencies*. There are examples in this guide from the fields of health, education, livelihoods, environment and relationship building, all of which are Plan objectives.

Various CSPs mention work to improve relationships between development stakeholders and establish effective development dialogues. Mobile technologies can be applied to gathering voices and opinions, such as through merging with existing community media (such as radio, websites or newsletters) for reporting or expanding participation in policy debates and campaigns, or to facilitate communication between stakeholders in different areas, for example in conjunction with a web forum or email list.

Capacity building is another area of work which involves information and communication. CSPs mention building capacity for sustainable appropriate practices, to tackle deforestation and strengthen community-based natural resource management. Mobile technologies can be applied to identifying and developing relevant content, coordinating events, publicising and mobilising opportunities, and the vital follow-up work of advice and support to trainees, including allowing communication and networking between them. Finally, examples in this report of mobile supported survey, data entry and analysis systems might be adapted to support monitoring and evidence based planning, or SMS-based systems can be adapted to support the coordination of logistics such as supplies in emergencies.

Rights-based work

Plan has adopted a rights-based approach to development, at the heart of which is a belief that people can only experience sustainable improvements to their lives and livelihoods if these are gained as a result of changes in their awareness of, access or entitlement to legal rights. Development based on this approach encompasses a broad range of work: to support citizens and communities to access their rights; to influence policy makers; to enhance communication and cooperation between actors; or to develop new methodologies, tools and resources. Information and communication are at the heart of them all, and mobile technologies can be applied to strengthen these aspects of Plan's work.

Plan programmes aim to protect civil rights and in particular children's rights, such as the promotion and protection of girls' education, and to promote children's participation in decision making. There are relevant examples above of mobile technologies applied to the monitoring of rights abuses via SMS to a central number (such as Wougnet, Groots or Ushahidi). Furthermore, mobile technologies can strengthen availability of information and awareness of rights, increase transparency in decision making and policy implementation, support capacity building of local people to engage in resource management and budget monitoring and coordinate or mobilise campaigning and lobbying (such as Fatamu).

Box 11: Questions for improving rights based work

- Could informing or connecting rights holders and duty bearers strengthen local development?
- How might mobile applications enhance the legitimacy and effectiveness of your campaigning work?
- How might you use mobile phones to enhance participation in decision making at different levels?

Organisational effectiveness

The role of mobile technologies in strengthening timely communication and reporting can be applied to strengthen Plan's and their partners' efficiency and effectiveness. For example, a system based on mobile phones can support reporting and communication between Plan staff to allow for more timely integration of information from the field into planning, programming and monitoring of work at national or international level. With the convergence of mobile and internet technologies, systems can be developed to allow groups of peers to share learning and experiences in appropriate ways. Furthermore, the widespread ownership and access to mobile phones within communities provides the opportunity for inclusion of much wider range of voices and opinions in the organisation's reporting and consultation processes, to feed into planning and monitoring.

Therefore a first reflection might identify local needs and processes which mobile technologies could support. From Plan’s local or national strategy, and the work of local community groups and partners, identify

- the **ongoing and planned processes and projects** in the local area which include a strong information and communication element;
- the **aims, objectives or priorities** which require a focus on communication and information; and
- the resources, opportunities for **locally appropriate and relevant content**, and any significant gaps.

Box 12: Questions for improving organisational performance

- What systems do you engage in to inform planning, implementation and monitoring cycles? Could mobile technologies enhance this? Expand participation and engagement?
- How do mobiles currently support communication and coordination between colleagues and stakeholders?
- How could this be improved?

This will provide the basis for design of an information and communications system using mobile technologies.

2. MAPPING AND PLANNING INFORMATION FLOWS

Once the type of work and needs for mobile phone technology have been identified, the next stage is to explore the **types of information flows** that would be most suitable. For example, the projects described in section one of this guide use mobile technologies to:

- **Provide information:** such as information and advice services.
- **Collect information:** including reporting, monitoring, data collection and management.
- **Facilitate two-way communication:** between peers, colleagues and support groups, connecting people with expert advice and support.
- **Push messages:** including awareness raising or mobilisation, lobbying and campaigning.
- **Transfer funds:** to staff on the ground, activists and community groups, microcredit etc or to receive donations from the public.

Depending on the objectives, the stakeholders, and their capacity, needs and interests, these flows need to balance appropriate levels of:

- interaction and engagement aimed at dialogue and transformations in relationships;
- strengthening demand for, and provision of, relevant information; and
- support for the provision of locally relevant content and data collection.

The following diagram illustrates how different types of projects, in this case those given as examples in this report, can be located on the axes of functionality and engagement, which may help to clarify some of the choices to be made.

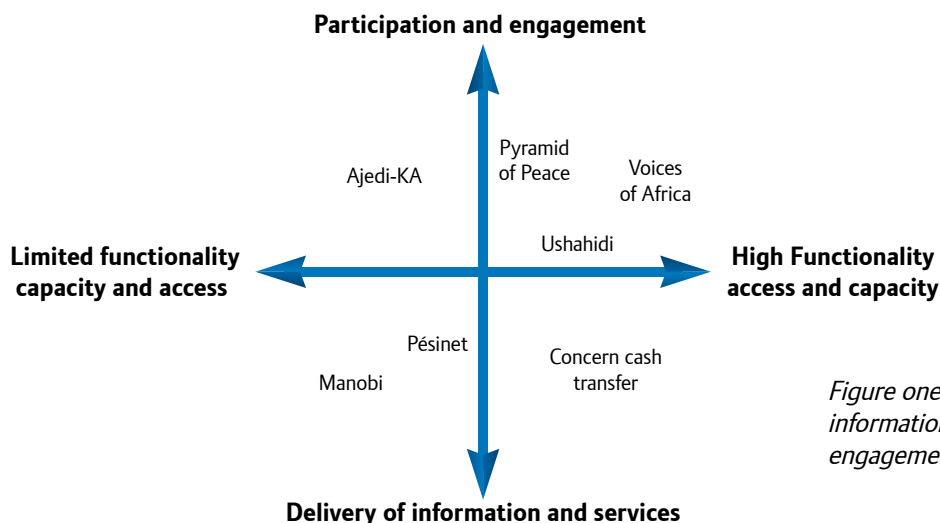


Figure one: from information to engagement

Ajedi-Ka and Voices of Africa are both projects in which citizens and community members are actively involved in generating and communicating information content. However the former relies on the simplest form of mobile technology, the voice call, and the latter requires technical skill and high functionality phones and network services to allow for uploading of video to the internet. On the other side of the diagram, Manobi and Concern are both service delivery type projects, although there are high levels of personal empowerment and impact noted for both. However, while Manobi services are available to subscribers on any device and network, the concern project uses M-Pesa which requires specific software, SIM cards and registration with the service.

Box 13: Summary suggestions for Stage One

- Check your project plans and strategies for:
 - *aims and objectives* related to information and communication;
 - *examples* of existing/good practice using mobiles in programme work;
 - *activities* which could be strengthened by a focus on information and communication;
 - activities which produce or strengthen *locally relevant information* content.
- Identify the communication and information needs of different stakeholders, and map the strengths and weaknesses of existing information flows.
- Identify partners and networks that rely on good communication and information.
- Reflect on the types of information and communication your team need to ensure programme quality and effectiveness.

This type of analysis will enable you to clarify where mobile technologies can be most effective and useful, and identify the types of information flows (push, pull, exchange etc) which fit those purposes. For example, do you want to:

- Inform a group of people to raise awareness?
- Mobilise and motivate?
- Encourage and enable a group of people to participate and engage in decision making which affects them?
- Is the audience very general, or specific?
- Do you wish to strengthen existing relationships and communication or create new channels?

Stage Two: Understanding the social and technical context for mobile use

Despite the enormous transformative potential of mobile phones, their impact on community development or the effectiveness of development organisations, will depend on the capacity of stakeholders and beneficiaries to develop and engage with them, their attitudes and practices. These are defined by their social context, including literacy, language and skills, and issues of control over and access to media; and their technical context, including the availability of equipment, infrastructure, services and technical support. Stage Two of using mobile phones effectively involves looking in-depth at both these contexts.

1. UNDERSTANDING THE SOCIAL CONTEXT

Communities and individuals have always devised strategies to inform themselves, as evidenced by the growth in mobile phone subscriptions among poor communities, and any mobile technology project must respect and build on those local strategies.

Social and cultural issues play a big part in how and whether information is accepted and used, and thereby translated into knowledge or changes in behaviour and practice. Information will have a different impact if the source is known and trusted, if the format and language are appropriate, and the receiver has the confidence and capacity to access, interpret and apply it. All of this means that a vital component of any information and communication system is the human or social dimension. It is the human relationships which transform a two dimensional information system into true engagement, empowerment and social change.

In many parts of Africa, people receive their most vital information directly from another human being, without direct contact with the technology used to transfer that information. Children relay messages from the mobile phone owner to the intended recipient, or the local health worker or agricultural extension worker pass on tips and information on routine visits to the field. While mobile technologies can, and do, make this information and knowledge transfer more accurate and responsive, their impact does not necessarily require the devices to be in the hands of the intended recipient of information. It is important to consider the role of the intermediary, which may have strong cultural or personal significance and therefore be an essential element of any information and communication system. The Tactical Tech Collective's impressive tool-kit on using mobile phones for advocacy points to this and the importance of using integrated communication strategies:

“In developing countries in particular, especially in rural areas, people who don't own phones may be unable to participate in mobile campaigns. This reinforces the need to consider mobiles as just one part of a wider strategy, to ensure that you also engage with people who don't have access to mobile phones.”

Furthermore, it is important to consider the social impact that unequal access to information and communication can have, and equally that the strengthening of capacity of those previously excluded or marginalised may have. As David Souter writes: *“Patterns of information and communications profoundly affect the way in which resources are used. Changes in those patterns, including those arising from new ICTs, are likely to change communities in many ways - not least in terms of who has power and influence within them.”* While this relates in part to the first stage of linking to local needs and processes, it is an important aspect of the design of the communications system of which mobile technologies will be part.

Box 14: Some questions for analysis of the social context

Who are the stakeholders of this proposed or actual process?

- What *motivates* them to engage in it? How will you engage them in the mobile-based activities? Will there be any capacity building or non-mobile engagement element of the work?
- How do people access their information, get their voices heard or influence decisions *at the moment*?
- How is this *different* for women/men, children/ adults, farmers/ non-farm workers etc.
- What *other stakeholders* need to be involved or supportive to make it work? Governmental, local, cultural, family, corporate, audiences etc.
- Who does the information/ content/ data *belong to*? And who is it of interest to?

What does the local socio-technical ecosystem look like?

- What are the most commonly used *communications technologies* in the area? Are these locally owned or carriers of local content? For example, telecentres, local newspapers or community radio.
- Are people using *mobile phones*? Who and for what? Are there any other development initiatives using mobile technologies in the area?
- Who *controls* access to the technology within the village or household? What impact might this have on mobile based work with the target audience or beneficiaries?
- What are the main *barriers* to mobile phone access and use among different stakeholders, such as minority languages, levels of literacy, infrastructure, pricing, control and ownership patterns etc? Does this make voice or text more popular for example?

What implications does this have for the system design?

- Who are the trusted information intermediaries? How might infomediaries be supported at local level?
- What systems could be used to create and translate relevant content?

2. MAPPING THE TECHNICAL CONTEXT

While there are a lot of pilots and initiatives to learn from in the area of mobile technologies for development, and many are mentioned here, these are not easily duplicated across Africa due to the great differences in service and network provision. In South Africa there have been some great innovations building on the widespread ownership of mobile phones and the availability of GPRS and accompanying applications such as Mixit. In many other contexts the systems developed have either been highly resource intensive (buying high-end devices such as PDAs or GPS, providing servers and building databases) or have worked with the most basic functions of mobile technology, either with open source SMS gateway applications such as FrontlineSMS which requires only a laptop, a mobile and a SIM card on the technology side, or for example using SMS with community radio to broaden the range and scope of the communications activities. **Pricing structures** also vary from country to country, and even between networks and types of services (SMS and data prices range incredibly) and international communication is often prohibitively expensive, with implications for cross-border campaigns or programmes.

Technical analysis requires an understanding not only of the capacity of the infrastructure/ network and the level of equipment already out there, but also an assessment of how current **policy and regulations** affect the poorest, most marginalised and participants in the proposed project or activity. For reasons explained earlier in this guide, in many poor areas, and particularly rural parts of Africa, statistics for mobile phone ownership and subscriptions do not tell an accurate picture of real access levels. People share and sell airtime, and may own more than one SIM card for a single phone, especially if they move around different areas. It is therefore important to get a good understanding not only of the potential and capability of locally available services, but to facilitate more participatory processes to uncover the real patterns of ownership, control and use of the technology, including for example, cultural attitudes towards women's or children's use of mobile phones.

Box 15: Some questions to analyse the technical context of mobile use

- What are the levels and patterns of mobile phone handset ownership and access? How does national policy and regulation help or hinder access for the poorest?
- How many networks operate locally? What kinds of services do they support? GPRS? WAP?
- What kinds of mobile phone applications are commonly used by the key stakeholders, their communities, or people with greater access?
- What capacity is there to access, use and adapt mobile phones?
- Who are the local (socially-minded) suppliers of hardware, software, system maintenance, support and capacity building around mobiles for social development?

Box 16: Summary suggestions for Stage Two

- Identify the key stakeholders who will participate directly in this work (direct access to the mobile technology or the information conveyed, or whose voices are being strengthened)
- Identify who are the key information or communication intermediaries or facilitators in their community or context – how can their roles be strengthened and made more accountable?
- Facilitate reflection on the strengths and weaknesses of existing means of accessing information or communicating in their context, including differences for women, men, young, illiterate, unemployed, urban, rural etc
- Identify the providers and enablers of functionality of mobile technologies in the context – from policy makers to network and handset providers - in order to understand the potential and limitations of mobiles, and establish necessary partners on the technology side, as well as policy advocacy needs.

Stage Three: Choosing the technology and content

One of the concerns about the ICT for development field is the relationship people have with the technology: Do they feel that they own it? Do they feel confident to adapt and innovate to make it meet their changing needs? Or are they limited to the types of uses offered to them by others?

When communities and users are involved in defining their needs, objectives and the social and technical contexts they operate in, they are better able to identify technology solutions that are appropriate to their reality. And because they have selected their solutions, the process of adopting them, and the resultant impact on intended beneficiaries, tends to be more predictable.

Two main types of choices need to be made in this third stage:

- Choices about the technical equipment and services: who will own them; train on them; use them; and fund their running and maintenance costs;
- Choices about the content that will be exchanged using this technology: how it will be managed and maintained; and how the project will be managed, monitored and evaluated.

The next section of this guide provides more detail and background on both these sets of choices.

1. IDENTIFYING TECHNICAL COMPONENTS

To fit technical possibilities and solutions to the needs and context, depending on the complexity of the system, may require some specialist advice. There are some online toolkits, including the excellent *Mobiles in A Box* by the Tactical Tech Collective (<http://mobiles.tacticaltech.org/>), which focuses on mobile use by NGOs for advocacy, but includes a wealth of valuable information and advice regarding technology choice, some of which is reproduced or summarised below.

Other social enterprises, not-for-profit companies, networks and NGOs exist which can either advise or suggest experts who can. One example are the research network EPROM (entrepreneurial programming and research on mobiles) based out of various universities in Africa including Nairobi, Makerere and Accra, to develop mobile based applications and run boot-camps to teach application development skills (<http://eprom.mit.edu/index.html>).

The equipment

Total cost of ownership, which includes costs of running, maintaining and replacing the equipment, as well buying it in the first place, is an important factor in assessing the suitability and choice of mobile technologies for the circumstances where they will be used. Lower-specification equipment or equipment that demands fewer additional resources (like reliable power supply) can be easier to keep in use over the long term.

The most commonly owned and used, and most accessible, mobile device is the basic mobile phone which, depending on the make and model, can do much more than just make phone calls. Mobile phones support quite superficial text information, due to the size of the screen and capacity, and are very good for broadcasting messages or inviting broad participation,

Box 17: The mobile phone operating system

This is the software that makes the phone work and this hardware is not accessible to software developers. This presents challenges for those in the not-for-profit sector wishing to develop mobile applications that are adapted for those who may need to use their phones in different ways, for example by making the phone interface locally relevant or by producing applications that are appropriate for disabled users. However, the situation is changing with the advent of the Google Android system and the Open Moko, and one of the most important operating systems, Symbian, is also in the process of converting to open source. (Ref. *Mobiles in a Box*)

due to their ubiquity, but not so good at complex analysis and debate. Other handheld, wireless devices include personal digital assistants (PDAs or palmtops), which have the capacity, the screen-size and the keyboard to allow for more text, applications or use as walkie-talkies, pagers and so on.

It is important to recognise that the most effective use of technology in the next few years will result from **convergence** between the portability and voice communication functions of a mobile phone, and the processing power and internet connectivity of a computer. The mobile phone is matched only by radio in its accessibility and reach, and this convergence is inevitably one of the most powerful and possible for large scale programmes or processes.

There are already many examples of the internet integrated into systems using mobile technologies, even where the network or user devices do not support direct access and uploading facilities. These include Ushahidi, which developed in response to the post-election violence in Kenya to allow alerts sent by mobile phone or email to be displayed on a website using maps and text. The UNICEF report “Rapid Assessment of Cell Phones for Development” gives many examples of the potential of web and mobile phone convergence, including in coordinating emergency responses, and monitoring of the millennium development goals.

The applications

There are a number of commercial and open source applications which allow NGOs such as Plan and partners to use mobile phones as part of a more complex information and communication service or system. Applications are often downloaded by individuals to access different web based services, with the latest devices, such as Apple’s iPhone, designed to make it easy to download and run numerous different applications, thus enhancing the utility and scope of the device. There is now a movement to develop more applications to support mobile use by social change and development organisations and networks. The newly established Open Mobile Consortium aims to *“Support social change organisations through collaboration to provide excellent open source mobile technical tools, together with training and support to allow implementation and innovation.”*

The main types of applications are: voice applications; SMS broadcast applications; data collection applications and the creation of websites that can be accessed easily and cheaply from mobile phones. What follows is a brief description of each type:

Voice applications

Information can be gathered and distributed in greater volume, more cheaply, and generally faster, using voice than using SMS. Some manufacturers have responded to the challenge of designing for non-literate or semi-literate users by developing mobile phones which respond to voice prompts in local languages. Some organisations are developing voice based applications, including the audio-wiki of the MobilEd programme.

Interactive Voice Response systems allow users to dial in for a menu of automated options, allowing them to report specific events or get specific information. The systems are useful for guiding callers to specific information, such as a news broadcast or update, or allowing them to leave a message. They can be a great way of providing dynamic information to a large audience of non-literate people but are very technologically challenging to create and maintain. These tools are powerful and have great potential for advocacy, but they are currently very challenging to install and require Linux administration skills. Tactical tech toolkit includes information about the open source software applications for different automated voice systems and such as Asterix, FreePBX and TrixBos which allow you to set up features such as voice mail, extensions, conference calling, interactive phone menus, and automatic call forwarding.

Box 18: Low cost calls and instant messaging from your mobile - VoIP applications

Voice over Internet Protocol, or VoIP, is the technology which enables voice to be transmitted over the internet. VoIP devices convert regular voice signals to digital so that they can be transferred via broadband connection, and then converted back to the original voice call at the receiver end. VoIP calls can be made to other VoIP devices, often without cost, or to normal telephones, whether fixed or mobile, for low cost. This can save a lot of money for organisations who make a lot of expensive international calls and teleconferences, and can also be used for instant messaging for effective internal communications on the move.

Gizmo (<http://gizmo5.com>) is a free software application for your phone which uses VoIP to allow for low cost calls you're your mobile, as well as instant messaging to other users of the application and users of PC-based services such as MSN or Yahoo. It uses a 3G or GPRS connection from your phone or Wi-Fi if your phone has this functionality. It is supported in all major world languages, and is easy to install. Although the software is free, calls via Gizmo to non-users will require Gizmo credit, and the mobile network operator will charge for the cost of data transfer, so it is worth finding out if there are special deals on data. Fring (<http://www.fring.com>) is another free application which uses VOIP across data 3G, WiFi or GPRS connections to allow calls and instant messaging to other users of PC-based services such as Skype, MSN Messenger and Twitter from your phone.

Questions for reflection:

- Do you and your colleagues have 3G, GPRS or WiFi connections on your phones? If so, are there billing schemes which make use of your mobile phone for data transfer cheaper?
- Could instant messaging via mobile phone be used with other stakeholders? For what purpose? What new skills and equipment would be required?

SMS applications

There are several applications, including some open source, which allow you to send bulk SMS, to store and organise replies or to create automated responses. An *SMS hub* or gateway application, such as Frontline SMS, allows you to send a large number of text messages via the mobile phone network using a computer (desktop or laptop), and a mobile phone or GSM modem. Messages are sent and received using software installed on the computer which transmits them through the attached phone or modem to the available mobile phone network. SMS hubs are quick, cheap and easy to set up, and because they do not require an internet connection it can be very useful for NGOs working in areas where access to the internet is not possible or is unreliable. Since messages are sent using a local mobile phone and SIM card, users are able to reply through their phones, and all messages are paid for through the SIM card, so no credit

Box 19: Sending and receiving text on a mobile phone

The basic form of sending messages between mobile phones is a text message, or SMS, which is a network service available almost everywhere. SMS can be up to 160 characters, and are sent via an SMS centre to the recipient's phone via a signalling path. This means that they can be sent and received simultaneously with data and voice calls, even at peak network times, although there can be delay between sending and receiving and they can sometimes arrive asynchronously. SMS are widely available, but short, and the screen-size of most devices is restrictive too.

Multimedia messages (MMS) can take longer text, graphics, photos, audio clips, video or any combination of these, with certain size limits. They are not available on all phones, or networks. USSD offers a menu system to make a lot of information available using SMS style technology and functionality and most networks support it.

GPRS (General Packet Radio Service) is a technology that enables high-speed wireless Internet and other data communications. Using packet switching, subscribers are always connected and always on-line, so services are easy and quick to access. It is not currently available on many African networks. WAP (Wireless Application Protocol) is a secure specification that allows enabled devices, including most modern mobile phones to access the Internet via micro browsers – these are browsers with small file size that can accommodate the low memory constraints of handheld devices and the low-bandwidth constraints of a wireless-handheld network. It is more widely available in Africa than GPRS, but it is expensive.

cards are required. However, this will generally cost more to run than web-based alternatives as each message sent is costed according to the network price plan and SIM card you're using. In addition, because messages are being sent out one at a time the process is generally slower, with an average of 8 to 10 text messages per minute.

Online SMS *aggregators*, through which you can send large numbers of messages more quickly, are generally cheaper. SMS aggregators are companies which sell text messages in bulk and deliver your text messages for you via the internet. In addition to generally being cheaper than sending the messages individually, SMS aggregators are able to send larger numbers of messages more quickly. There are many commercial SMS services. Web-based group messaging services are not appropriate for organisations working in places with unreliable telecommunications infrastructure or no internet connectivity.

Short codes are easy to remember, short telephone numbers of 4 or 5 digits which people can dial to access or subscribe to a service. They are useful especially for campaigning, as people are more likely to remember the number, but expensive to set up and maintain.

There are some constraints to using SMS for communication, not least the 160 character limitation (although some people describe this as an advantage!). Some networks limit the number of times you can send the same text message, to prevent illegal spamming. If your organisation wants to set up a mobile phone programme across more than one country users may find it expensive to call or send an SMS abroad.

Box 20: Some SMS applications

There are many examples of organisations using bulk text messaging, as reported in section one of this guide, to provide information for subscribers or members, run public awareness campaigns, conduct user surveys or competitions, to generate participation in campaigns and facilitate mass reporting or simply to keep in touch with staff, partners or supporters.

FrontlineSMS (<http://www.frontlinesms.com>) is software for your computer for sending and receiving group SMS messages. It has been specifically designed for use by NGOs and requires only a computer and a mobile phone or GSM modem to operate, with no requirement for internet connection. The software communicates using a mobile phone or modem, which you attach to your computer with a USB cable. The software allows you to create SMS contact groups who you can engage with via text message and SMS surveys, keeping a history of messages for each contact and allowing for exporting data received to excel or other programmes for analysis. It is also possible to set up an automated reply manager, whereby automatic response messages are sent on receipt of SMS with key words. For example, texting the word 'opening hours' would receive an automatic response with the clinic opening times.

Frontline SMS is free for all charities and non-profit organisations, although you will incur the costs of sending the SMS from your mobile operator. Installing FrontlineSMS is very quick, and support is available in several languages including English, French, Portuguese and Swahili. If there are no compatibility problems with the GSM modem or phone you are using or any other technical issues you can be up and running in about ten minutes. Furthermore, the potential of FrontlineSMS to meet your communication and information needs can be further expanded by integrating it with commercial SMS service Clickatell on the internet. FrontlineSMS has been used for many activist and advocacy activities around the world, and examples to inform and inspire are provided on the website, and on www.kiwanja.net

Clickatell (www.clickatell.com) and BulkSMS (www.bulksms.com) are commercial SMS services which allow you to send SMS messages to over 500 networks globally. They use online or desktop software applications which can be downloaded from their website. They allow email to SMS, bulk text messaging or mobile group messaging.

Questions for reflection:

- What is cost per SMS via different available networks and applications?
- Who are your target audience for SMS communication? Can they read and write? Do they own their own phones? Are they based in one area or across networks and borders?
- How can you collect and store securely the phone numbers of the target audience? What data protection regulations apply?

Data collection tools

There are many uses for data collection, whether in programme work or for monitoring of programme quality and effectiveness. There are many examples, some simple and others more complex, of programmes using mobile devices such as phones and PDAs to collect and transfer data into a data management and analysis system, such as a database. AED Satellife is mentioned in this guide, and they are developing Gather, an open source tool for data collection via mobile devices¹⁶. Furthermore, Nokia has developed the Nokia Data Gathering software, a versatile data collection tool for mobiles.

Box 21: Using your mobile as a survey tool - EpiSurveyor

EpiSurveyor (www.datadyne.org) is a free, open-source software suite, designed for organisations wishing to undertake surveys in communities using handheld computers or smart phones. It enables anyone to create a handheld data entry form, collect data on a mobile device, and then transfer the data back to a desktop or laptop for analysis. EpiSurveyor incorporates a Windows-based program for the creation of surveys, and a Java-based “engine” that uses these surveys to input data in the field. Both of these programs assume no technical background, no programming skill, and are made to be “word-processor easy” to use. First you enter your questions into the Designer programme on your computer, and publish the resulting form to the mobile devices which are used to collect and input the information. Once the data has been collected the mobile devices are brought back to the computer and all the data can be combined into a single table which can be analysed using a variety of formats.

Given the high tech nature of the devices it runs on, the use of EpiSurveyor requires investment in technology and training which would make it useful only for large scale or mainstreamed survey programmes. However, work is ongoing to develop a version usable on standard mobile phones. Other data-collection tools are available for mobile phones but they are not generally Open Source.

Questions for reflection:

- How might you be able to capture and analyse meaningful data with simple survey tools?
- How could you integrate mobile survey tools into the work of field staff to avoid overburden?

Web applications

Mobile websites are designed to be compatible with a wide range of mobile phone handsets allowing people without access to computers and people on the move to access the information on them. Commercial mobile blogging services have been used successfully by NGOs such as Greenpeace and Amnesty international to bring people up to date on their campaigns and allow them to share their photos and videos. Gabcast.com is a podcasting and audio-blogging platform that provides an easy way to create and distribute audio recordings giving through VoIP (voice over internet protocol). Once you have made a recording and have published it, a news-feed is immediately and automatically updated to alert subscribers to your channel.

Posting to the internet from your phone

Internet based blogging and photo sharing are commonly used to share views, news, updates and may be useful for staff to share pictures and , for stakeholders to upload updates, news, videos or opinions to a project website or staff to an organisational intranet. There are various types of applications which can be downloaded and installed on mobile phones to allow you to upload text, video and images onto the web via blogging or photo sharing sites, or via FTP or email. Though the services are free, obviously the costs of sending data across the network can be quite high, depending on the volume.

^{16/} see www.healthnet.org/gather.php



For example ShoZu is a free, though proprietary application which can be downloaded from www.shozu.com as long as the user has an account with an online sharing service such as Facebook, Flickr or YouTube. It requires a phone which can run Java applications, and capable of data connections. Once the software is installed on a phone it is easy to use, and allows you to add tags and descriptions to your photos, send videos and photos to blogs, or report directly to citizen's reporting sites such as BBC and CNN.

Making your website available to mobile users

Many organisations have developed mobile accessible versions of their websites or intranet sites. In particular this is useful where websites have very dynamic and regularly updated information, which people need to access on the move. MobiSiteGalore (www.mobisitegalore.com) and Wapple.net are online services which allow the building of mobile internet sites to the .mobi standard which ensures that the sites produced are compatible with the range of handsets on the market. While they both have free versions, Wapple.net will add adverts to your mobile site unless you pay for the service. Nokia also have a mobile internet toolkit for members of the Nokia Forum (www.forum.nokia.com). Included in the kit are editing tools and help files, along with simulators which allow developers to see how the site will look on a mobile phone. Some technical expertise is required but there is substantial documentation and support available. While the services are easy to use, you will need an internet connection to use them and you will need to have an existing site to modify and an additional .mobi domain name for your site.

Mobile payment and fundraising

Organisations such as PayPal, a financial transactions company, now provide a mobile-based service, allowing their account holders to make payments (including donations to charities) directly through their mobile phones. Organisations who have made use of this service include Amnesty International and UNICEF (donors simply texted the word "AMNESTY" or "WATER" respectively to a special five-digit short code to receive a link to donate \$10 to their chosen organisation).

In some countries, m-banking (mobile banking) services allow payments and donations to be made through mobile handsets with the sum paid deducted directly from the user's pre-paid balance. M-Pesa in Kenya is one of the better known m-banking services, run by local operator Safaricom, and services in other countries such as MTN's "Me2You" in Uganda allow pre-pay mobile users to transfer call time between phones. Several of the projects described in this guide have relied on such services, and found them to be robust ways of sharing and transferring funds.

2. ENSURING RELEVANT CONTENT AND CAPACITY

Relevant content and user capacity are two crucial elements of any information or communication project or system. The type and amount of training will depend on the level of familiarity of users with the equipment, the complexity of the system and the role of the users. For example, mobile users may need training not only on using the mobile device for uploading audio, visual and text information, but also on reporting techniques.

Furthermore, capacity needs to extend beyond the ability to use mobiles, to enable people to innovate and adapt, including building in peer support and networking aspects. Christian Kreutz in his blog *Crisscrossed* writes *"I find mobile communications particularly promising because most ideas can and will be developed by the users themselves, as well as being embedded in the local context."* For example the developer of Frontline SMS, Ken Banks, pointed to an initiative in Mozambique where the users developed completely new uses based on their needs, such as providing field-based workers with the option to request top up via text. But the number of pilots and questions of scale up and sustainability suggest that this type of process needs to be considered in the design, not left to chance.

It is important to ensure that there is sufficient technical capacity, in the user group or local area, to install and maintain systems. Open source enables much more local ownership and appropriation of the technical side. New applications benefit from clear visual guides in relevant languages to show what to do in different situations and allow users to benefit to the full potential.

Content

Manobi, who manage one of the longest running mobile based information services in Africa, Xam Marse in Senegal, have noted that the strength and relevance of the content will drive participation, subscription and engagement with the service. They state that *“our experience proves that poor farmers who are marginally literate and have never owned a mobile can easily and quickly jump the technical divide if the content and services truly meet his or her economic and or social development needs.”*

The issue of content again depends entirely on the type of programme to be implemented. In some cases, sharing relevant local information via mobile phone, for example on market prices or public services, may be the focus of the project, and the strategy for ensuring that this information is available should be carefully considered as an integral part of planning. Other organisations or areas of work may be able to feed into this. In other cases, it may be that the focus of the project is on building capacity of local people to gather and share their own information and perspectives via mobile phones, in which case the emphasis needs to be more on relationship building to ensure that this information is well received and acted upon.

One major issue in terms of information is validation. Some of the experiences using mobile phone to collect data, especially as regards violence and human rights monitoring where support may be called out in response to the alert, there need to be strong systems to ensure that information is valid, while respecting the need for anonymity or confidentiality. Feedback loops are an important aspect of this, ensuring that people who provide information are informed when and how this is used or acted upon, to motivate trust and participation in the system. Finally, trust is essential in any information or communication system, and needs to be built in not only with the appropriateness and reliability of the data, but also through the sensitivity, responsiveness and accessibility of the underlying communication system or network.

Box 22 : Building capacity to use mobile technologies

PROTEGE QV, a Cameroonian NGO working for “Promotion of Technologies that Guarantee Environment and a better Quality of Life” conducted capacity building in 2005 for leaders of 20 rural women’s associations to explore the potential of SMS for networking and communications. The training covered:

- Defining information: oral and written communication
- Defining the types of information sharing activities within network associations
- Discussion of different communication practices and media, with their relative strengths and weaknesses (including face to face, post, radio, internet, newsletters)
- Introduction to the options offered by mobile phones, technical support for writing and sending SMS to individuals or groups, and tips on using SMS to communicate within networks.

Protégé QV have noted that since the training the women not only use SMS to communicate within their networks, but also with the head office of the NGO, which is 400 km from some of the rural areas where the associations operate, in order to access support materials, information on training and advice on follow up activities.

Box 23: Summary suggestions for Stage Three

Gather the information, reflection and analysis from previous stages to make the key decisions relating to the actual system design, equipment, training and support needed. For example:

- What is the **scale** of the process or project? How much can you afford?
- To what extent are the **system components** already in place? Do they need adapting or supplying?
- What are the **training** needs?
- What **partnerships** need to be established or strengthened?
- How will **content** be generated, sourced and/ or translated?
- How can a directory of numbers or **contact** details for the mobile users involved in the project be collected and maintained? Are there data protection issues around collecting and using mobile phones?
- What are the possible **social implications** of new ownership patterns or access and how can this be managed?
- How can you **evaluate the impact** (social, economic, cultural etc) of the use of mobile phones - what are the expectations and the indicators beyond counting SMS messages.
- Is the process **sustainable** or is it only planned to be a short term intervention? What business models may enable sustainability without compromising the social aims?



3 • Lessons learned and issues to consider

As this guide shows, mobile technologies have great potential to enhance access to information and communication capacity and contribute to social development or change objectives. Some of the issues of access, affordability or usability which may undermine the sustainability and scalability of work using other ICTs, such as computers or video cameras, are less pressing when it comes to mobile phones, which have been widely adopted and adapted by people in even the poorest areas, with least capacity. However, many of the other issues and concerns around the digital divide and ICT as it relates to social change do remain.

The limits and limitations of (mobile) technology

For one thing, users in more developed markets are able to take advantage of the highest functionality, and usually the cheapest rates. There are great differences in opportunities provided by the mobile market throughout Africa (i.e. the difference in network capacity between South Africa and other African countries) and within countries, such as between urban and rural, or rich and poor.

Manchester University Development Informatics group found that despite the potential of mobiles to flatten information asymmetries there is still a “mobile divide”, which has its roots in fundamental access barriers of electricity, network coverage, and income, as well as difference in functionality of elite high-end models. So while mobiles provide a fantastic tool to enhance community-based development and social equity work, they also are another area to watch as regards inequality of opportunity. This also implies a policy aspect to mobile technology work, looking at open access, regulation and pricing issues in order to push for the highest functionality for those who can most benefit from breaking isolation and marginalisation.

1. The social and political void

It is important to recognise that isolation and marginalisation are social issues, and technology alone cannot transform these relationships. The questions and examples provided in this guide explicitly link the application or integration of mobile phones to social objectives and wider processes of change. This is because the main learning from analysis of ICT projects over the years has been that the technology does not have inbuilt social bias. They have been applied to improve the effectiveness or quality of different development relationships and processes, and so they have been used to build competitive advantages which marginalise the poorest, or in the worst cases stir up violence and discrimination. Ultimately it is the orientation and quality of the underlying development process which will inform and direct the implementation of mobile technologies for child-centred community development.

Firoze Manji makes this point eloquently and convincingly in his article ‘Mobile Activism or Mobile Hype’¹⁷, in which he looks critically at two campaigns with a mobile activism element, including one for which his organisation Fahamu was responsible, to examine the real success factors. The figures for SMS signatories to the petition organised by Fatamu suggest that the impact was due to the novelty of the approach and the subsequent media interest which publicised the campaign. In the case of a programme using SMS to strengthen reporting of women’s rights abuses, he shows that the training in use of SMS did not result in SMS being used for reporting of incidents, but the reporting increased due to the strengthening of human relationships that the training, and other capacity building elements, achieved. Mobiles are tools, and *“Like all technologies, what effect a tool has depends who has control and what purpose it is used for. Tools have potentials for social progress as well as social regression”* and he gives the much-feted example of Kenyan elections as illustration of this, giving examples of the kinds of hate messages sent out by mobile phone, at the same time as others were using the technology to serve and consolidate supportive networks. In the more positive examples and uses, Manji considers that *“The technology was essentially a manifestation of underlying social relations”* and he concludes: *“Our recommendation would be that the use of SMS might at best be a complement to social organising rather than as the central part.”*

^{17/} In ‘New Media and Social Activism’, a section of the fourth edition of the Gender and Media Diversity Journal. Available from www.genderlinks.org.za



Research by Richard Heeks and Abi Jagum on the impact of mobile phones on SMEs in Nigeria corroborates Manji's analysis. While they identify gains for entrepreneurs using mobile phones in terms of saving time, cutting out travel, strengthening communications with buyers and suppliers etc, this does not have a notable affect on equality in relationships, with trusted and well connected intermediaries in fact being strengthened and new relationships or supply chains rare. *"There are few signs that mobile telephony is levelling the playing field - more that it has been a technology of inequality."* Instead of rebalancing asymmetric business relationships, those with best access to mobile technologies and contacts gain most, and those with no access lose out.

2. Legality, confidentiality and security

Mobile phones contain a great deal of sensitive information, and yet are often accessible by members of the same family, group or community. Questions of security and confidentiality are not only ethical concerns, but use of private data including telephone numbers can be a legal issue. Furthermore in some countries there are laws limiting the sending of unsolicited text messages to combat text spamming. You may need to consider some kind of subscription or opt in service which will bring further considerations regarding the management of the subscriber numbers and data. Tactical tech's toolkit has more information on data security issues, and it may be necessary to get legal advice depending on the planned activities and users.

Box 24: Useful or just plain annoying? Avoid being a spammer!

Peter Benjamin of Cell-life noted the fine line between information and spam, and the need to establish your own guidelines with agreed protocol regarding subscriber text messaging. In their case they will send no more than two SMS two weeks apart. Strategies need to balance informing via text message with the active engagement of subscribers or participants.

Privacy and confidentiality are concerns for many areas of development work, for example when dealing with sexual health, political mobilisation or human rights monitoring. NGOs and activists doing work which is politically sensitive must ensure that their data, conversations and messages stay private. One project of human rights monitoring in Sri Lanka dealt with some of these issues by locating their server outsider the country. Where confidential information is being shared, special consideration will be necessary, for example Cell-life who communicate with HIV positive people, amongst other groups, take into account the privacy and shared phone issues by offering an option for coded messages.

3. Sustainability issues: time, scale and linkages

Most mobile innovations and applications need to reach a critical mass of users before they can have full impact or become sustainable. A reaching a critical mass requires time and scale. The magic formula for sustainability is that enough people are aware of the programme, able to access it, and finding enough benefit to tell others. Manobi, who run a subscription market information service, have found that people pay for what they value. Where there are services they value, and enough people or scale to make it work, it will be sustainable. Analysts recommend taking a five-ten year view of impact, which is often difficult in donor-led processes.

Other programmes may be applying mobile technologies to making efficiency gains, or increasing the reach, of public goods and services. In those cases the learning is around the need for strong partnerships with relevant parts of the public and private sectors. Links to the aims and programmes of local and national government will strengthen the sustainability and scope of the programme. Political will is a key factor in sustainability and success.

Local organisations and actors are also key partners to ensure that adoption is supported locally. The mobile market, including phone and network providers, are one of these partners, but there is a warning that not all communication and information services can be commercialised, and there is a role for NGOs in ensuring that the market does not allow for the needs of the poor and marginalised to be ignored. Many of the projects, especially those run as not-for-profit or social enterprises such as Xam Marse and Cell-life, have developed strong business

models for sustainability. Disaggregated demographic data and targeted communication are assets built up through subscription or membership services, and very valuable. However, there is a need to ensure that any user or advertising funded models are equitable and ethical, and do not affect participation in, or orientation of, the development process.

4. Estimating the costs

Of course, the cost of the programme will depend entirely on what is needed, how much is already there, and the training and capacity as well as staffing aspects. Specialised tools and software can be challenging to use and require special technical support. Other applications can bring down the costs and save money. For example, in South Africa a text message costs around 60 cents to send, but through bulk SMS applications around 1/3 of that cost. International or cross-border interventions will be expensive for participants unless special transnational programmes are set up which can be expensive. Mobiles in a box have a lot of information on how to budget – depending on scale, size, users etc – though focused on advocacy campaigns.

5. Evaluating the impact of mobiles

The impact of mobile technologies needs to be evaluated in terms of both the success of the programme in relation to social objectives and the use of the mobile technologies. As the Fatamu experience shows, an evaluation of one without the other does not give a complete picture as to the enabling factors for success and impact, and therefore inform future programming. Cell-life for one is currently developing new methods for evaluation of mobile use in development work. *“Counting text messages is not evaluation”*, Peter Benjamin remarked. Monitoring of the impact and value of the technology itself, depending on what is expected or hoped to happen, can be quantitative or qualitative, for example looking at whether users feel supported, able to ask questions, able to choose the info most relevant to them, or whether they have created new functions and relationships.

Over to you: looking forward

I hope that this guide has inspired and provoked you to think about how mobile technologies can add value to your work. This guide provides an overview of experiences of NGOs, projects, networks and campaigns of joining the mobile revolution in Africa. In some cases these are simple cases of using existing mobiles better. In others, they involve the creation or adaptation of information and communication systems, with a focus on the information packaging and management, on the capacity of people to share and use the information, and the technology available to support it.

As the guide explains, there is no such thing as an off-the-peg mobile project, just as there is no such thing as a one-size-fits-all development project. The ideas and tools provided in this guide are designed to help identify the needs, and the conditions, which will inform the technical and social choices. The examples and experiences shared in this guide will hopefully be useful to enlighten this assessment process, and support the actual planning and design of projects or initiatives using mobile phones.

You may already have some ideas on how to build on your current information and communication practices to make better use of mobiles. Or you may wish to carry out a more thorough mapping of opportunities for using mobiles to achieve your goals in your specific context, building on some of the questions and activities presented here. The ideas here are quite general, so you will need to get advice and insight into programmes, actors and conditions for mobile use in your context. You may wish to follow some of the links to documentation and knowledge bases in the area of mobiles for development in Africa which are provided in the appendices.

Please feel welcome to send any feedback, ideas, suggestions and lessons learned to ict4d@plan.fi. Also, please visit the blog for social media and mobile technology: <http://globalpicture.wordpress.com>

Box 25: An inclusive process for taking the ideas forward

It is important that a range of perspectives are brought together to assess how mobiles could be leveraged at different levels to make Plan's work more effective, equitable and efficient. Participatory workshops involving a range of staff, or even different stakeholders, would provide a good opportunity to think through some of the issues raised in this guide. Using the reflection questions in this guide, participants could provide a clear picture of how mobiles are currently used to connect communities, enhance programmes, support rights-based work and improve organisational effectiveness, and the existing socio-technical context. From that point, examples of innovations such as those provided here could be used to inspire connections between development needs and priorities at different levels, and the opportunities that mobiles provide.



4 • Appendices

Appendix One: Selected links and references

The following are some of the most comprehensive and useful guides or studies of mobile technology for development.

General issues

“The GSMA Development Fund Top 20: Research on the Economic and Social Impact of Mobile Communications in Developing Countries.” This report highlights some of the main learning about impact, and details 20 resources which give good insights or data, so is a good place to start. http://www.gsmworld.com/documents/GSMA_development_fund_top20_print.pdf

Balancing Act: <http://www.icconnect-online.org/News/mobileActive-08-Mobile-messaging-for-the-masses>. This article about the MobileActive08 conference highlights some of the current uses of mobiles, the opportunities and pitfalls and is very readable.

“m-Development: Current Issues and Research Priorities” This briefing report details some of the issues identified at a workshop of the Development Informatics group at Manchester University. People want mobiles, and they want projects delivered through mobiles because they are aspirational as well as useful. However, a lot of the potential is seen in high functionality rather than simple SMS models, which require changes in policy and infrastructure environment, as well as access to take place. <http://www.sed.manchester.ac.uk/research/events/conferences/documents/mobiles/mDevelWorkshopReport.pdf>

Wireless Technology for Social Change: Trends in Mobile Use by NGOs is a report prepared by the UN Foundation which gives a very comprehensive overview on the state of the art as regards mobiles for development, including case studies for health (including Uganda and Kenyan examples), humanitarian aid (including Kenyan post election text alerts) and environmental monitoring (including Ghanaian and Kenyan examples) as well as observations and considerations. <http://www.unfoundation.org/press-center/publications/wireless-technology-for-social-change.html>

Databases of projects using mobiles for social change/advocacy

- <http://mobileactive.org/directory> includes a directory of project and tools and their suppliers.
- <http://shareideas.org> is an online community and wiki for sharing ideas on how to use mobile communications for social and environmental benefits. Projects can be searched by sector – civic engagement - economic empowerment - education - environment - health and humanitarian relief.
- Kiwanja also has a database of projects and documents, searchable by areas and topics.
- The communications initiative (www.comminit.com) and Soul Beat Africa have a large database of communication for social change projects, searchable by mobile as a factor, and also published an overview of the issues in 2008, identifying various projects.
- The mobile web in developing countries wiki (www.w3.org/2008/MW4D/wiki/Stories) has a great deal of resources on the issue.
- NetSquared project gallery includes descriptions of the projects applying to the USAID Development 2.0 challenge, many of which use mobile technologies in very innovative ways. www.netsquared.org/projects

How-To Guides

- **Tactical Tech** have produced a **mobiles in a box toolkit** / website which supports non profits to work out how to best apply mobile technology to their social change and development projects, including the challenges, considerations, tools and applications, cost implications and technical advice. It is very clear, concise and useable and comprehensive – a great place to start.
- **Mobile Active's Guide to using mobiles for Advocacy** gives some examples of how mobiles have been used in campaigning, for informing, recruiting and fundraising, on issues including environmental monitoring, policy change. Includes possible cost considerations, steps for organising a campaign, lessons learned and issues to consider in order to run a successful campaign, mobilising and not overburdening or alienating supporters.
- **Kubatana: How to Run a Mobile Advocacy Campaign** October 2008 explains the benefits of using SMS in an advocacy campaign, runs through the steps to follow, including building the subscriber database and publicising the campaign, choosing and setting up the appropriate technology and gateways, setting the budget and cost implications to consider, composing messages, processing replies, and involving partners and other stakeholders. The booklet includes some practical exercises to help think through a contextualised strategy.

Appendix Two: Selected projects and contacts

Who	Where	What	How	Contact
Kiwanja - FrontlineSMS		Provides tools and advice to support IT at grassroots: learning, research, advice, and free access to frontline SMS to which he gives free access. 900 downloads so far, including use for security alerts, getting news out, providing market prices, subverting media blackouts etc.	In Malawi, rural health programme have taken frontlineSMS and developed new uses - such as a database where workers can text drug name and get automatic response re side effects, or top up money can be sent out to workers in the field.	www.frontlinesms.com
MobileActive		A community of people and organizations using mobile phones for social impact, committed to increasing the effectiveness of NGOs using mobiles for organizing, communications, and service/information delivery.	Provide resources for NGOs to effectively use mobile phones in their work: <ul style="list-style-type: none"> • locally relevant content and services, • support and learning opportunities, and • networks that help members connect to each other. Also run a website and regular conference bringing ideas and practitioners together.	www.mobileactive.org
Cell-life	South Africa	Cell-life is a not for profit organisation applying ICT to HIV issues. It has grown out of a University of Cape Town project, funded by various donors including PEPFAR, but considers self-sustainability a possibility using their data to help government to narrowcast and target their HIV information and advice services, and get interaction and feedback.	Five main areas of activity, using mobile phones: <ol style="list-style-type: none"> 1. <i>Mass messaging</i> on HIV topics and issues - use a condom type messages - info push 2. <i>Mass information provision</i> on positive living – via a list accessible via WAP/ USSD 3. Linking patients and clinics (i.e. reminders, adherence, lining patients to services) 4. Organisational capacity building (improve coordination, communication, links between levels (e.g. Treatment Action Campaign) 5. Peer to peer communication and counselling (e.g. HIV+ mothers) using chat room, IM (Mixit - Java over GPRS) etc. Hoping to support monitoring and evaluation of National Strategic Plan, collecting data via cellphone questionnaires.	www.cell-life.org
Ushahidi	Kenya	Grew out of the post election violence in Kenya – originally a website then with a mobile phone accessible system for reporting, alerts etc.	They had a short code donated and able to publicise that for people to text in incidents. A database was able to see the number and the message. Developing open source software to enable this type of reporting and sharing via mobile and web – requires an SMS gateway.	<i>Juliana Rotich – Global Voices</i> www.ushahidi.com <i>Eric Hersman – White African</i>
Tactical Technology Collective	International	Tactical Tech is an INGO helping human rights advocates use information, communications and digital technologies to maximise the impact of their advocacy work. They provide guides, tools, training and consultancy and carry out projects with advocacy groups to help increase the impact of their campaigning.	Toolkits include: <ul style="list-style-type: none"> • Mobiles in-a-box: Tools and Tactics for Mobiles Advocacy (http://mobiles.tacticaltech.org). • Message in-a-box: Tools and Tactics for communicating your cause (http://miab.tacticaltech.org); • Visualising Information for Advocacy: An Introduction to Information Design (http://www.tacticaltech.org/infodesign). 	ttc@tacticaltech.org <i>tel + 44 1273 604 848 (UK)</i> www.tacticaltech.org

Who	Where	What	How	Contact
Eprom	Africa/ US	EPROM is a research project across various African universities, and MIT, which aims to foster mobile phone-related research and entrepreneurship. The aim is to enable, inspire and promote entrepreneurial activity in Africa.	Key activities include: <ul style="list-style-type: none"> • the development of new applications for mobile phone users worldwide • academic research using mobile phones • the creation of a widely applicable mobile phone programming curriculum Part of the programme includes teaching mobile phone programming in ten African universities, including the University of Nairobi (Kenya), Makerere University (Uganda), GSTIT (Ethiopia), Ashesi University (Ghana), and the Kigali Institute of Science and Technology (Rwanda). They also offer “SMS Boot Camps”, project-based courses enabling students to launch and market their own SMS services to mobile phone users in their own country.	http://eprom.mit.edu/index.html
Fahamu	Africa wide	Fahamu supports the strengthening of human rights and social justice movements by promoting innovative use of information and communications technologies; stimulating debate and analysis; publishing news and information and delivering educational courses, including by distance learning.	Use of mobile phones includes the petition for ratification of the African Union protocol on Human Rights, and also Firoze Manji’s analysis of the success factors, and limitations, of the use of mobile technologies quoted in this guide.	infokenya@fahamu.org - Kenya office, infosenegal@fahamu.org - Senegal office www.fahamu.org
Open mobile consortium/ Java Rosa	Africa wide	OpenROSA is a consortium formed to create open source, standards-based tools for mobile data collection, aggregation, analysis, and reporting. Developing open source solutions and conforming to standards so that different projects can easily share code, data, ideas and infrastructure.	Useful group to provide solutions or advice on open source software for mobile applications. Open Mobile Consortium is focused on bringing together groups working on initiatives, formulating best practices and standards and generally working to bring this fragmented industry a little closer together.	www.openrosa.org Contact Peter Benjamin from Cell Life re open mobile consortium
Voices of Africa	Africa wide esp Kenya, South Africa, Ghana, Cameroon	Forum and platform for African journalists and reporters to blog and share their views.	Experience of training and supporting journalists to use mobile phones for reporting	info@voamf.org Netherlands http://voicesofafrica.africanews.com/
Trade at hand	Burkina Faso, Senegal, Mali	A mobile service for SME exporters to position themselves and make business relations more transparent. Its market Prices component provides exporters with real time commodity prices on international markets.	Real time prices both for wholesale and retail markets sent to paying subscribers through via SMS. Trade at Hand service providers organize initial training for members of the marketPrices network.	Trade-at-Hand@intracen.org http://www.intracen.org/trade-at-hand/
Protégé QV	Cameroon	Aims to promote individual and collective initiatives to induce rural development, protect the environment and improve well-being of the community. Believe in the power of ICT as strategy to fight against poverty and have four main areas of activity are grouped in four programmes: Leadership, Environment, Micro-enterprise, ICT4D.	Have provided capacity building on use of SMS for grassroots networks (mentioned in guide)	Sylvie Siyam sylviesiyam@protegeqv.org (yaounde) www.protegeqv.org

Who	Where	What	How	Contact
Ajedi-Ka	DRC	Founded in 1988 the NGO seeks to promote and protect the rights of children affected by armed conflict and child soldiers. The organization demobilizes and reintegrates child soldiers and maintains long term follow up on the welfare of these children. At present, AJEDI-Ka is also launching several initiatives to combat the spread of HIV/AIDS amongst child soldiers and former combatants through awareness raising, testing and assistance to those affected.	Village committees are trained and equipped with mobile phones and given a number to contact Ajedi-Ka workers to report child rights violations. These are verified and reported to international child rights watch and followed up with the relevant authorities.	http://www.ajedika.org/index.html DRC
TradeNet	Ghana and available to all Africa	TradeNet is a private company based in Accra, Ghana aiming to create a platform where farmers and traders across the world can share market information via mobile networks and the web. TradeNet works in partnership with public donor-funded projects like USAID's Mistowa in West Africa and CGIAR's FoodNet in Uganda. TradeNet has been designed and produced by BusyLab.	Tradenet are currently building a set of server software that NGOs or for-profits could use to build local or national exchanges. As the software gains popularity, it should become increasingly possible to search for products both locally and internationally using little more than a mobile phone and an account.	Mark Davies www.tradenet.biz
Concern Kenya	Kenya	Used mobiles for cash transfer during emergency food crisis in Kerio		
Farm Africa	Kenya	Working on mobile support to animal health among livestock farmers		
Groots	Kenya	A network of women self-help groups and community organizations aiming to "ensure that grassroots women are masters of their own destiny through their direct participation in decision making processes." serving as a platform for grassroots women's groups and individuals to come together to share their ideas/ experiences, to network and to find avenues to directly participate in planning and implementation of issues that affect them.	Experience of using mobile phones for monitoring abuses of women's property and land rights in rural Kenya.	Esther Mwaura grootsk@grootskenya.org http://www.groots.org/members/kenya.htm
KACE	Kenya	Provides crop growers with daily fruit and vegetables prices from a dozen markets through SMS branded as SMS Sokoni in partnership with the Safaricom Limited. The information is updated everyday and hence is most current and timely to the user.	A farmer anywhere where the Safaricom network exists can access market information in different markets, who is buying or selling what commodity, at what prices, where and when, as well as extension messages using their mobile phones. The user receives and pays for the SMS messages to the service provider.	www.kacekenya.com

Who	Where	What	How	Contact
Mobile4good	Kenya	Delivers vital health, employment and community content via SMS on mobile phones in order to inform and empower disadvantaged individuals. Currently seeking franchisees and investors to replicate in further countries including Cameroon, Tanzania, Uganda, Nigeria and Nepal.	SMS delivery of information for a fee of 7 Kenyan Shilling (Ksh) per SMS received on Jobs (Kazi560) aimed at blue-collar workers and employers, useful tips on various pertinent health issues and MyQuestion service, to allow customers to anonymously ask HIV/AIDS and Breast Cancer related questions and receive answers. Her560 aimed at professional women, providing information on health, diet, fitness, fashion, family, finance, events etc as one-off tips and subscription. The Community News service is distributed free to subscribers in Kibera, Kangemi, Kawangware, Mathare and Mukuru sending out information on events in the community.	<i>Antony Mwaniki Kenya antony.mwaniki@gmail.com www.kazi560.co.ke http://uk.oneworld.net/section/mobile</i>
Oxfam	Kenya	Involved in supporting mobile monitoring and reporting of post election violence		
Pesinet (Pèse Infantile sur le Net or “Weighing children on the Net”)	Mali	A medical prevention service for under-fives from low-income families, using a “diagnosis at a distance” system based on monitoring children’s weight curves. The service consists of having children weighed in their homes once or twice a week by trained local people.	Weighing agents are equipped with a mobile phone with a Java applications programme for different services. They note the weight of the child and other relevant data on their mobile phone. This data is then sent once a day to the doctor via GPRS, to a database installed in a computer-server in the premises of the Orange Mali Foundation. The programme doctor can then consult the children’s files by connecting to the dedicated PESINET Internet site and selects the children to view, sent by text to the weighing personnel. The children are then examined by the doctor.	<i>www.pesinet.org</i>
ENDA	Senegal	ENDA collaborates with grassroots groups in search of alternative development models on the basis of the experience, expectations and objectives of marginalised peoples. In general, Enda works to enhance the visibility and value, in practice as well as theory, of the knowledge and tools that exist in local development efforts. Has a focus on ICT, providing email, mailing lists and WWW hosting and providing information services to Senegal rural poor communities.	Do not yet use mobile phones but have well established approach to local knowledge development and support and have been looking at mobile phones in relation to discussion of poor farmers re adaptation to climate change.	<i>Senegal - Tel : (221-8) 22.42.29 / 21.60.27 ; E-mail : se@enda.sn www.enda.sn</i>
Manobi	Senegal, South Africa	Operator of Mobile and Internet services for rural areas in developing countries to respond both to the specific needs of millions of active professionals in rural areas as well as those of telecommunication operators who wish to develop their traffic and coverage. Especially XamMarse which offers market information via mobile to subscribers paid for by advertising and sponsorship.	The two main characteristics of Manobi: <ul style="list-style-type: none"> • a low-cost, easy to use, class operator technological platform, which adds in a user-friendly way multi-channel data access (web, wap, sms, voice..) to the regular vocal networks of mobile telephone operators; • a suite of innovative applications and e-business services responding to the demand of professionals in the agricultural and fisheries sectors. 	<i>contact@manobi.net Daniel Annerose daniel.annerose@manobi.net http://www.manobi.net/worldwide/</i>

Who	Where	What	How	Contact
SocialTxt	South Africa	SocialTxt is a messaging tool that uses the 120 unused characters on a 'please call me' (PCM) message to deliver social calls to action. It encourages individuals to access information that will allow them to make informed decisions about their health and other social services.	SocialTxt is an open-source tool that is freely available for NGOs to use. The only real cost of using SocialTxt is messaging. Depending on the size of the audience and the nature of audience reaction / interaction required, SocialTxt might also require operational costs for running call centres. SocialTxt is a messaging and information dissemination tool - once that is done, other partners and service providers needs to come on board to fulfill the need which this access to information has created.	www.praekeltfoundation.org/products-and-services/socialtxt
AED – satelife and Netmark	Various including Uganda and Mozambique	Working on information and knowledge management issues in health, recently with hand held devices. Improving healthcare workers' access to information through: delivery of text material (guidelines, drug lists); collection of data (one off surveys, routine surveys, long or short); support to health centres management.	PDA's send data to African Access Point, which automatically downloads relevant, useful and interesting information/ data to their device. Their health data gets sent along to server and downloaded at district health office into different databases as relevant. Some level of analysis, also sensitivity set so alerts can be automatically generated (e.g. number of suspected malaria cases in same area). Developing Gather – open source back-end system to create forms for data collection, and send out via email, cellphone, PDA etc, receive back and analyse against rules with certain sensitivity built in. Support to Netmark to use PDA's to monitor take up and use of insecticide treated malaria nets.	www.healthnet.org
Rescuer	Uganda	Project to support traditional birth attendants in Northern Uganda via mobiles to monitor and refer pregnant women.	A solar-powered VHF radio communication system was installed that includes fixed base stations at the health centres, mobile 'walkie talkies' to connect the TBAs with the nearest health unit, and vehicle radios in the referral hospital ambulances and the District Medical Officer's vehicle. Also includes transport (bikes) to enable TBAs to travel to recharge batteries etc. Also capacity building, equipment of health centres etc.	<i>Ugandan Ministry of Health, United Nations Population Fund (UNFPA), and Uganda Population Secretariat. Email Maria Musoke lip97mgm@Sheffield.ac.uk</i>
Wougnet	Uganda	Women of Uganda Network is an NGO set up in 2000 to promote and support the use of ICTs by women and women organisations in Uganda, so that they can take advantage of ICTs to effectively address national and local problems of sustainable development. This includes looking at how modern ICTs can be integrated with traditional means of information exchange including radio, video, television and print media.	Famously ran a campaign to lobby MPs to sign a domestic violence bill, using SMS. The network are at the forefront of debates relating to the use of ICT, including mobile technologies, for sustainable development goals in Uganda.	<i>info@wougnet.org Tel: +256 41 453 20 35 Uganda</i>

Who	Where	What	How	Contact
Kubatana	Zimbabwe	The Kubatana Trust of Zimbabwe, incorporating the NGO Network Alliance Project (NNAP), aims to strengthen the use of email and Internet strategies in Zimbabwean NGOs and civil society organisations. Kubatana makes human rights and civic education information accessible from a centralised, electronic source.	Kubatana uses a variety of technologies to communicate with Zimbabweans, including using SMS to send out notifications of public events, inspiring quotations, selected comments from current and past articles and statements and converting some of their web site content into 160 character messages. They also use FreedomFone to provide audio content to members.	+263-(0)4-776008/ 746448 info@kubatana.org.zw www.kubatana.net
MobilEd Initiative	South Africa	A research project to look at how mobile technologies such as mobile devices, wireless networks, voice technology, social software and wikipedia can be used for teaching, learning and empowerment of students within and outside the school context.	MobilEd are aiming to develop two products to be freely available for anyone to use: <ul style="list-style-type: none"> • MobilED KIT – a box with mobile tools, software and a guidebook for use in a classroom or youth club to carry out collaborative mobile learning projects. • MobilED SERVER – a technology platform for Governments, organizations or operators willing to support use of mobile phones in collaborative learning projects to install. 	teemu.leinonen@uia.fi http://mobi.ed.uia.fi

Tool	Features	Licensing	Contact
Episurveyor	A free, open-source software to create a data entry form, collect data on a mobile device, and then transfer the data back to a desktop or laptop for analysis. The programs assume no technical background, no programming skill. Episurveyor currently only works on some PDAs but is being developed to work on other mobile phone platforms.	Open source	Info@datadyne.org or www.datadyne.org
FrontlineSMS	FrontlineSMS is software for sending and receiving group SMS messages and requires only a computer and a mobile phone or GSM modem to operate, with no requirement for internet connection. It is also possible to set up an automated reply manager, whereby automatic response messages are sent on receipt of SMS with key words.	Open source	http://frontlinesms.com
RapidSMS	RapidSMS is an SMS-based tool that allows for bulk text messaging and data collection through SMS forms. RapidSMS also features bulk SMS messaging functionality similar to what you would find in desktop SMS tools like FrontlineSMS. Key Uses include <ul style="list-style-type: none"> • data collection for reporting • Transferring messages to large groups • Identifying gaps/ logistical needs • Sharing qualitative information about the situation in the field • Community based monitoring • Creation of database of diverse community voices For example, see the Rapid SMS child nutrition project by Columbia University and UNICEF www.netsquared.org/projects/child-malnutrition-surveillance-and-famine-response	RapidSMS leverages several open source projects including MobilEd, Kannel, Asterisk, and Django.	UNICEF Innovations and Development team

Tool	Features	Licensing	Contact
Nokia Data Gathering	The Nokia Data Gathering software can be used to create tailored questionnaires and distribute them to multiple mobile phones using a normal mobile network. Field personnel surveying local conditions can quickly complete the questionnaires and immediately transmit their findings to a central database. The system also allows organizations to geo-tag data with GPS location information to build a more detailed picture of very local conditions. Nokia Data Gathering consists of four modules, to enable smooth information transfer from the survey administrators to the field workforce and vice versa.	Freeware for NGOs. The software has been created with open-source technologies and with a view to successful interplay with existing systems.	<i>Nokia www.nokia.com/datagathering</i>
SMS reception centre	A program that reads incoming short messages from a cellular phone and, for each message, executes the actions that you specified. Unlike other popular desktop SMS utilities, its main purpose is to handle incoming messages and send outgoing ones without any human intervention. Usually it's set up at the computer with a dedicated cellular phone or a GSM modem plugged in. It could be used to add SMS functionality to a database or web portal, administer a computer remotely, create SMS subscription lists, send SMS automatically, collect short reports from many remote people. MobileActive comparison claims this is difficult to learn, but useful once the programme is understood.	Shareware (free trial, pay \$80 for full version)	<i>http://sw4me.com/wiki/SMSReceptionCenter?v=1ajp</i>
RESDIDA: Mobile Content Distribution Platform to Scale Organizations' Reach to Poor Communities	Resdida is developing a simple to use platform for organizations to leverage mobiles for content distribution, two-way messaging, and project monitoring and evaluation by receiving and collating SMS-based field reporting in real-time, allowing for faster response time. Content may consist of program updates, emergency info, weather, health, sanitation, crop prices, news, as well as desired info such as entertainment, sports and culture. A survey module allows collection of feedback, and user data collection provides information on preferences to refine future development. Resdida has a working prototype, and is in development for release in 2009 which will be piloted with 1-3 organizations to fully test its capabilities, make changes and prepare for broader rollout. No technical knowledge/programmers, negotiations with telcos, purchase of software, servers/maintenance is required.	Not clear – seems to be proprietary	<i>www.resdida.com Karen Vincent: karen@resdida.com</i>
SMSCaster	Bulk SMS sending software, which relied on your phone or modem and a computer, similar to FrontlineSMS, but easier to use according to MobileActive's comparison. Also receives and automatic response functions.	Proprietary – sale of license.	<i>www.smscaster.com</i>
ActiveExperts	To set up a full featured SMS Centre allows organisations to send, receive and process SMS and e-mail messages, including possibility of using it with an SMS message provider such as Clickatell for using shortcode. The framework is designed support virtually any scenario where low-and high volume SMS and e-mail messaging is required. Send and receive and process SMS and email messages, and store them in a central database.	Proprietary – sale of license	<i>www.activexperts.com</i>

Plan is an international humanitarian development organisation that achieves lasting improvements in the quality of the life of children in developing countries. Plan has no political, governmental or religious affiliations: its core values are child centredness, respect and professionalism.

Plan has been working for and on behalf of children for 70 years, and its awareness-raising activities in Finland began in 1998. Today Plan is active in 66 countries worldwide.



Plan Finland

Pasilanraito 5, 2nd floor, 00240 Helsinki
Switchboard (09) 6869 800
Fax (09) 6869 80800
info@plan.fi, www.plan.fi

SUPPORTED BY OFFICIAL
DEVELOPMENT AID FROM THE MINISTRY
FOR FOREIGN AFFAIRS OF FINLAND