



mobiles in-a-box

using mobile phones for advocacy



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Tactical Tech's other toolkits include: Security in-a-box, Message in-a-box and NGO in-a-box
Tactical Tech's other guides include: Maps for Advocacy, An Introduction to Geographical Mapping Techniques, Visualizing Information for Advocacy - An Introduction to Information Design (English and Russian), Quick 'n Easy Guide to Online Advocacy.

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Introduction

Mobiles-in-a-box is a collection of tools, tactics, how-to guides and case studies designed to help advocacy and activist organisations to use mobile phones and related technology in their work. It is designed to present you with possibilities for the use of mobile telephony in your work and to introduce you to some tools which may help you. We hope that this toolkit will inspire you and help you to plan and implement a mobile advocacy strategy for your organisation.

WHY ARE MOBILE PHONES GOOD FOR ADVOCACY?

1. In times of crisis, the tactical use of mobile phones can save lives.
2. Using mobile phones, NGOs and independent advocates can reach people that they couldn't reach before.
3. Mobile phones can help NGOs and their audiences to communicate with each other in new ways, for example through text alerts, multimedia and surveys
4. The communities served by NGOs and advocacy groups can use mobile phones to provide and share information as well as to receive it.

Mobile phones have spread rapidly through the developing world, revolutionising telecommunications and, for many people (particularly in rural areas), making them accessible for the first time.

They provide individuals and communities with valuable access to a range of voice and data services for personal and commercial purposes. They make it easier for users to engage in civil society and in the democratic processes of their countries. This engagement may take many forms: monitoring elections, receiving job alerts via SMS (text message), running small businesses, reporting illegal logging, accessing up-to-date market price information or providing an alternative form of media access. Mobile phones can also help users to participate in m-banking (mobile banking) and keep in touch with family and friends. The flexibility of mobile phones offers advocates and activists new audiences and new ways of making connections. For example, they have been used to help people during environmental disasters and political emergencies, for election monitoring in Africa and to help Filipino migrant workers communicate and campaign about labour rights.

WHAT'S IN MOBILES IN-A-BOX?

This booklet contains:

Tactics

for using mobile phones to support advocacy:

- o **Engaging with people and encouraging them to participate:** Helping people engage more fully in civil society by giving them access to information; human rights and environmental monitoring using text messages; giving feedback and opinions to decision-makers.
 - o **People's media:** Using the multimedia capacity of mobile phones to create content and to report using blogs and/or images.
 - o **Coordinating and mobilising:** Using mobile phones to organise meetings, to put out calls to action and to communicate in emergencies.
 - o **Fund-raising:** Using mobile phones to raise money for your organisation through text message campaigns and the use of mobile payments.
- Our discussion of each subject includes information on related security issues, about possible pitfalls you should consider in planning your work and about the tools you can use. We also include instructive and inspiring case studies from around the world.

Security

This section shows you how to use mobile technologies safely and securely, how to protect data (your own and that of your organisation) and how to ensure that services provided by your organisation are safe and secure for users.

Resources

- o A guide to some of the **tools** and services that have proved particularly useful in mobile advocacy, **and how to use them.**
- o **Budgeting for mobile advocacy** shows you how to budget effectively for a mobile phone advocacy project.
- o **Other resources you may need** shows you how to scale your mobile advocacy efforts to your organisation's available resources.

Links

We've also included further links to other resources, tools, services and documentation which are not discussed in detail in the toolkit.

About this toolkit

This section will tell you about the people and organisations that worked to put this NGO-in-a-Box together and to test the technologies that we discuss here.

THE CHALLENGES OF MOBILE ADVOCACY

While mobile phones can be very useful for advocacy work, there are challenges to be borne in mind.

Mobile technologies, economies and policies are diverse and change rapidly, which can make it difficult for organisations to plan mobile advocacy programmes effectively. What's more, mobile advocacy strategies are new and haven't been thoroughly evaluated so it can be hard to assess what will work best in a particular situation or with a particular audience.

Finding and tracking your audience

Before starting your mobile advocacy programme it's worth spending some time thinking about your audience and how they use their mobile phones. For example, if your audience is sharing handsets it's inappropriate to be using mobiles to send or receive confidential or sensitive information.

It can be difficult to persuade people to trust you with their phone numbers. Responsible handling of the data that people give you is the best way to gain trust. Be sure that your database is up-to-date and secure and that the people included in it agree to let their mobile numbers be used to contact them. Be sure to let people know that you may be using their mobile phone numbers. Tools such as the organiser's database (<http://www.organizersdb.org>) or CivicCRM (<http://civicrm.org>) can be useful for setting up and maintaining a database. You should always make it easy for people to unsubscribe from or opt out of your mobile phone services.

Privacy and Security

Mobile phones contain a great deal of sensitive information, so it's vital to think about security. To learn more about how to keep yourself and your data safe see the chapter on security.

Your country's legal system may place constraints on your organisation's use of text messaging, for example requiring you to inform people what you may do with any data you collect from them or limiting the number of text messages you are able to send. 'Text spamming', or sending unsolicited text messages, is illegal in some countries, where users have to opt in by text, via the internet or during a recruitment process in order to receive your text messages. To find out the legal situation in your country, contact the government body which deals with telecommunications.

Technological Challenges

Much of the advocacy work that is currently being done using mobile phones is groundbreaking, and lessons continue to be learned. There are many examples of failed mobile campaigns, most of which don't make the news, and a few successes. It is important to have reasonable expectations from the beginning.

The specialised tools and software that are needed in order to do this sort of work with mobile phones are mostly very challenging to use and require technical support. To learn more about these tools and to find out about some online services which may be easier to use, see the chapter on tools and how to use them.

Text messaging is a flexible and useful tool, but it also has limitations. For example, if you are thinking of using mobile phones to conduct a survey you should bear in mind that the text message format offers no context to users who may be struggling to understand or interpret your questions. Answers to survey questions have to be very short and formatted in a particular predetermined way in order for automated systems to cope with them.

Cost

Mobile advocacy programmes can be remarkably cheap, but more complex plans can get expensive and need to be well thought out. See the budgeting and other resources chapters for help with this.

Audience Issues

Mobile phone use is very different among different groups: for example, young people often use SMS (text messaging) much more than older users. When designing a mobile advocacy programme you should tailor it to the appropriate audience or audiences.

When you're developing programmes it's important to remember that mobile phones are often shared between users. Many people still access telecommunications services through shared phones or "Village Phone" schemes (shared phones are phones purchased and shared between friends and family members. Village Phones are purchased mostly by women in rural areas (often via a small micro-finance loan), and can be used by members of the community to make calls for a small fee). 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.

The literacy of mobile phone users should not be assumed. 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.

Obtaining the phone numbers of target audiences can be one of the biggest challenges NGOs face when trying to use mobiles in their work. People may be reluctant or suspicious when asked to provide their phone numbers and a lack of trust between parties can mean an early end to mobile-based projects.

Language and font issues

Ensure that your target audiences are able to read text messages that you send them. If your audience speaks a minority language, the font for that language may not be installed on your phone. Installing minority language support on phones is not trivial and usually has to be done by an official repair centre rather than by the user. What's more, if you are delivering information, you may need to offer it in more than one language.

The complexity of mobile operating systems

The **mobile phone operating system** is the software that makes your phone work. Two operating systems run more than 95 percent of the world's computers, but dozens of systems are behind the 2.5 billion mobile phones in circulation.

The benefits of Open Source software which have led to innovation in the traditional computing environment don't apply to mobile platforms because the proprietary drivers that make the phones work aren't accessible to the Open Source community. Instead, mobile phone software and applications are developed to order for the mobile phone manufacturers, who pass only the functions on to the consumers.

This is the opposite of the web development environment: in the web context innovations develop at a rapid pace because it's easy to experiment, make mistakes and 'play' with technologies by demonstrating on a small scale that an idea or programme works.

This closed platform presents challenges for groups in the not-for-profit sector wishing to develop mobile applications that are adapted for people who may need to use their phones in different ways, for example by making the phone interface locally relevant (providing different languages and/or fonts) or by producing applications that are appropriate, say, for visually-impaired people or people with tremors.

This situation is changing with the advent of the Google Android

(Open Source) system (<http://code.google.com/android>) and the Open Moko (<http://www.openmoko.com>) which is billed as the “World’s First Integrated Open Source Mobile Communications Platform”. However it is unclear whether the Google system will be compatible with older phones. One of the most important operating systems, Symbian, is also in the process of converting to Open Source.

Dealing with Big business

Those hoping to set up programmes using mobile technologies are obliged to do so via the global mobile industry which provides carriers and aggregation services. Their pricing structures are complex and vary from country to country, for example in some regions text messages are more expensive than voice communication, which has made them a less popular way of communicating. Some sorts of data have to be sent via the country where the company providing that mobile data service is based, which is expensive. Service providers charge a lot for of cross-border messaging and roaming; an organisation wishing to set up a trans-national messaging programme must attempt to ensure that the service is reasonably priced in and between all of the target countries.

NGOs and activists doing work which is politically sensitive must try to make sure that their data, conversations and messages stay private. Service providers can and do share information on mobile phone use with government agencies.

The political landscape

The political situation in a country or region has an impact on the development of programmes and tools using mobile technologies.

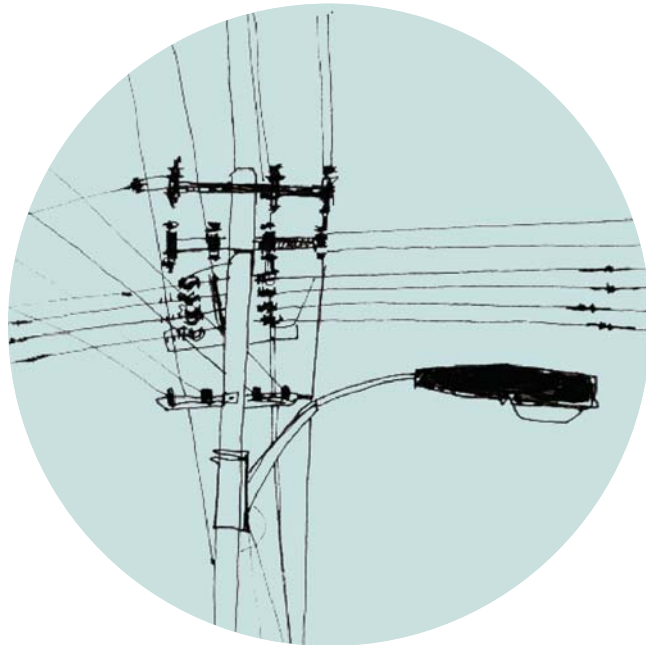
Human rights issues

It is worth taking into account the political and labour rights issues related to handset manufacture. A recent report produced by SOMO - the Centre for Research on Multinational Corporations entitled The High Cost of Calling detailed the poor working conditions in the factories of the five largest mobile telephone companies: Nokia, Motorola, Samsung, Sony Ericsson and LG. Workers in factories producing parts for Nokia and Motorola work without proper protection and are exposed to chemicals that cause chronic illnesses and serious physical harm.

Environmental issues

As with any electronic device there are environmental issues related to the entire life cycle of the mobile phone. The mining of coltan (a

mineral essential for mobile manufacturing) is associated with human rights violations in the Democratic Republic of Congo (for more details on coltan mining visit the Cellular-News website at <http://www.cellular-news.com/coltan>). The dumping of e-waste such as old mobile phone batteries in developing countries is also a problem (read about the United Nations Environment Programme's concerns at: <http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=495&ArticleID=5433&l=en>)



Part 1 TACTICS



TACTICS

Engaging with people and encouraging participation

WHY ARE ENGAGEMENT AND PARTICIPATION IMPORTANT FOR ADVOCACY?

Finding and engaging your audience is a vital part of the advocacy process. In order to use mobiles effectively to do this it's vital that your organisation keeps an accurate and up-to-date record of the mobile phone numbers of your staff, members and supporters.

Encouraging the participation of the wider public makes it possible for NGOs to:

- Survey their users in order to identify specific concerns to focus on and lobby for.
- Compile, collate and redistribute information on local experiences, campaigns and needs.
- Provide a platform which broadly sets out the interests and perspectives of the communities they serve.
- Represent their constituents better at the wider level, making their voices heard nationally or internationally.
- Use information gathered from communities to help plan future campaigns and projects.

HOW CAN MOBILES HELP?

Finding and engaging audiences can be a big challenge for NGOs. Mobile phones can help by providing a new means of staying in contact with those audiences, for example through text message updates on campaigns and activities. These updates can be carried out using Front-lineSMS or a commercial service such as Clickatell or BulkSMS. Mobile phones also provide a very direct means of reaching people who might not be accessible via email or the internet.

Mobile phones can allow their users to engage more fully in civil society and the democratic process, and hold the powerful to account. They can be used along with other media such as community radio in order to gather feedback and opinions. Here are a few ideas for how your organisation can enable the widest possible participation by using mobile phones for surveys, petitions, monitoring and for the provision of information. We have also included some examples of successful current and recent projects which have used mobile phones in interesting ways.

Look at the *Coordinating and mobilising* section for more specific information on how mobiles can help in emergencies and situations which demand a quick response.

PROVIDING INFORMATION

Alerts, news, and updates on a particular cause, event or project can be distributed in many ways. Sharing information with users keeps them interested, helps educate them, fosters engagement and can be a catalyst for spontaneous person-to-person campaigning. There are various means of using mobile phones to provide information:

You can send messages and encourage your supporters to forward them. This has the advantage of being cheap for you and is the easiest way to provide information via mobile phone.

SMS (text message) subscriber services for specific campaigns can keep users engaged by providing updates and news alerts. This requires ongoing funding to support the sending of messages during the whole campaign. You should also ensure that you provide users with an easy means of unsubscribing from this service, and that you have sufficient funds to scale services up should they become unexpectedly successful (see our budgeting section for more information on preparing for this eventuality). You can use commercial services such as BulkSMS or Clickatell for these alerts or set up your own SMS hub using Front-lineSMS.

You can also set up an interactive voice response (IVR) system which allows users to dial in for pre-recorded information on a particular topic. This is particularly useful for potential users with low literacy. In Zimbabwe an IVR system was set up by the civil society organisation Kubatana (<http://kubatana.net>) to make information about sexual health available, especially for teenagers, from a website called Auntie Stella (<http://www.auntiestella.org>).

IVR requires more technical knowledge, and the use of TrixBox, Asterisk or FreePBX. If you want to know more about the skills you'll need for this, look at the guidance we've included in the chapter on tools and how to use them.

SURVEYS

Information from mobile phone surveys can help you understand your constituents' needs and hopes, which means you can better represent them and plan more effectively. Surveys can also be used to get opinions and feedback from the wider public or from sections of the public. People surveyed can be asked to provide opinions on a range of topics such as recent news items, themes or current affairs, or they can take

to a question by sending you a given keyword selected from a list of possible answers that you have offered them. This can be a good way of getting quick reactions from people as they carry their mobile phones with them most of the time. However, since text messages are limited to 160 characters, you should be very clear about what you are trying to achieve with the poll and about how you phrase your question and the possible answers. Test the poll on a small group of people before you begin polling in earnest, to see if the question and answer options are clear enough.

In estimating the cost of this type of project you should factor in the expense of publicising the phone number you want people to dial in to. You could consider buying a short code (a short phone number people may find easier to remember). This is an expensive option but might encourage people to respond.

It may also be worthwhile setting up a general phone number which your organisation can use to gather feedback on the ongoing project or activity.

You can use a commercial surveying service or use FrontlineSMS survey manager function. You can also use Episurveyor, which is specifically designed for surveys.

In Kenya informal surveying has been carried out to allow people to report corruption and environmental degradation:

Interactive SMS services to influence local governance

Send a text message to your local MP (Member of Parliament) demanding action on an issue! It's possible! Bunge SMS (<http://www.bungesms.com/what.html>) in Kenya is a mobile phone-based service by Made in Kenya Network that combines the internet and mobile telephony with the aim of empowering every Kenyan to influence local governance in their constituencies. People can report corruption, violence and environmental degradation, influence constituency project choices and monitor development activities. This service provides Members of Parliament and other stakeholders in each of the 210 constituencies with a source of timely information on the needs and desires of voters.

The text message can be sent to a dedicated short code number. For instance, one constituent texted saying - "Kilome security is so bad. people r being killed by gangs armed with guns and as our mp u have kept quiet. we need your help."

PETITIONS AND PROTESTS

It is possible to set up petitions that can be signed either online or by text message, which means people don't need to have internet access to take part. The technology needed to support this is still fairly challenging. It can be done using FrontlineSMS or any Bulk SMS service (such as Clickatell or BulkSMS) which converts a text message into an email. These text messages can then be integrated into an existing online petition as additional signatures. To do this you will need to write some computer code in a programming language such as PHP.

Signing a petition via SMS

One of the earliest, if not the earliest, uses of mobile technology in social campaigning was carried out in 2002 by the African NGO Fahamu.

In 2004, Fahamu joined forces with SOAWR - the Solidarity with African Women's Rights NGO - to promote the ratification of the Protocol on the Rights of Women in Africa, a piece of international legislation drawn up to guarantee the rights of African women. More traditional electronic media were used to support the campaign, such as email news via Fahamu's Pambazuka newsletter and a dedicated website. In addition, a South African mobile phone number was set up, with supporters encouraged to text the word 'PETITION', along with their names, to signal their support for ratification. Incoming messages were converted to email and an up-to-date list of signatories was displayed on the campaign website.

Fahamu have since run a second campaign, this time in support of the Global Call to Action Against Poverty - GCAP - which calls for the cancellation of African debt. This campaign was more widely known for its use of white wrist bands.

Consumer protest using SMS petition

The first cyber protest in the Philippines was a successful consumer protest using an SMS petition. Around August of 2004, the consumer group *TXTPower* (<http://www.txtpower.org>) led some 28 million Filipinos in protest against the Philippine Congress' recommendation to impose a "text tax." The government had also proposed a Value Added Tax (VAT) hike from 10-12 percent to 20 percent.

TXTPower allowed consumers to text their signatures of the petition against the tax to a central number. A text barrage was launched at the same time, aimed at the main proponents of the Bill. The campaign

against the text taxes even went outside the country: migrant workers joined the campaign as they rely on text messages as the cheapest and most accessible form of communication with their families.

Through the collective efforts of the consumers, Congress stopped the formal filing of the “text tax” proposal.

Taking on big business with text messaging and a mobile boycott

On 19 September 2003, a number of mobile phone subscribers in Nigeria switched off their mobile phones in protest against the perceived corporate failings and excesses of the GSM phone companies.

The one-day boycott was organized by the National Association of GSM Subscribers of Nigeria and the Consumers Rights Project, with the sole objective of obliging them to reduce tariffs which were considered unreasonably high.

The calls for the boycott were spread by a viral SMS that read, “Let’s force GSM tariffs down. Join a mass protest: Switch off your GSM phone on Friday 19th 2003. They will lose millions. It worked in the US and Argentina. Spread this text”.

Deolu Ogunbanjo, who heads the National Association of Telecommunications Subscribers, claimed that close to 80% of cellphone users had joined the protest.

The boycott was preceded by a poll conducted on the website of a local newspaper which showed a groundswell of support. Out of 2,595 people polled, 2,328 - or almost 90% - said they would join the action, while 216 said they opposed it. By the end of the week sections of the media reported substantial support for the boycott in the southeast and southwest, where the bulk of subscribers lived. Source: South Africa’s Sunday Times quoted in a Balancing Act article which can be read here: http://www.balancingact-africa.com/news/back/balancing-act_175.html

Commenting on the boycott, Ebenezer Obadare argues that the success of the campaign, run largely through SMS, signifies the emergence of a new outlet for protest, and a new way for civil society to engage against the state. Ebenezer Obadare in *The Great GSM (cell phone) Boycott: Civil Society, Big Business and the State in Nigeria* Dark Roast Occasional Paper Series No. 18 (2004)

MONITORING

Members of the public can be asked to help with election monitoring, for example, or to report specific events such as human rights violations or environmental damage. Monitoring using simple text and voice services is accessible, and helps grassroots communities to engage in the political sphere. Individuals can make a very effective contribution by helping, in real time, to gather and report widely dispersed information which can then be centralised and analysed on a computer database and redistributed in various forms.

Mobile phones have proved very useful in election monitoring around the world (see case study below). Text messages can be used to feed observations from monitors back to a central computer hub. The collected messages can then be collated and passed on to other monitoring groups and authorities.

Citizen election monitoring through SMS

The Human Emancipation Lead Project HELP are a non-profit group of young professionals in Nigeria advocating for social change through good governance. Their goal is to monitor elections and ensure that they were transparent and fair and to encourage the Nigerian electorate to participate in the electoral process.

The 2007 Presidential elections presented a 'vital opportunity to truly change the cause of things for good for the common Nigerian by ensuring that a transparent and acceptable general election is conducted'.

HELP installed FrontlineSMS onto a single machine, obtained a phone and a new SIM card and began working on the monitoring process. Part of this involved the creation of a website to encourage the general public to register as volunteers and to detail ways they could engage in the process. Individuals registered their mobiles by texting their names, location and polling station to the new NMEM election monitoring hub. Each volunteer was then registered on the FrontlineSMS system.

On election day itself volunteers were asked to send in two reports, the first to contain details of when the polling station opened, of voter accreditation and of the ballot box delivery times. The second was due when the polls closed and was to contain information on the result, counting processes, turnout and general conduct of the election. The process was a great success - 11,000 messages were sent in to the SMS hub.

Using mobile phones to monitor local elections

The International Center for Accelerated Development (ICAD) in Nigeria used text messages to mobilise their supporters when they found that a local election was being rigged.

The Plateau state in Nigeria held elections in March 2008. Sensitive election materials are kept at the premises of the electoral body where they are sorted out for each local government in the state and escorted by party officials, electoral commission staff, and security agents to the 17 local offices where they would be used for polls.

ICAD used SMS messages to alert their members when they discovered that there was rigging taking place by means of ballot papers being thumb-printed.

These viral messages were so effective that the elections were cancelled. ICAD followed this with high-level advocacy which resulted in the removal of the former electoral boss. They continue to use text messaging to promote information on good governance.

Informal monitoring can also take place via phone numbers established specifically to receive SMS reports from members of the public, for example alerting you to violence or environmental disturbances. This is especially useful in situations where attempts are being made to prevent abuses as they happen. These reports can be displayed on a website. In addition, this kind of monitoring can be an effective and low-cost means to encourage more people to participate in your human rights or environmental monitoring programme, and all it requires is a dedicated SIM card and someone to transcribe the messages onto a website.

Documenting human rights abuses

Ushahidi.com (<http://www.ushahidi.com>) is a website that was used to monitor and document violence in Kenya after riots broke out in December 2007. The riots erupted across Kenya after the unpopular sitting president Mwai Kibaki was sworn into power following an election that was widely seen as rigged.

Anyone can report incidents of violence that they have witnessed by sending an SMS to a short code messaging service number. This is then verified by a local NGO and presented on a map of Kenya. Various categories of abuse such as incidents of riots, looting, deaths, property loss, rape etc. are monitored and documented.

Text messaging has also been a valuable tool for raising the alarm over environmental devastation. In **Argentina**, Greenpeace used mobile phones to mobilise communities concerned about illegal deforestation in the Amazon. Greenpeace provided indigenous people with mobile phones, which allowed them to text for help when their lands came under attack from developers. Members of the communities sent text messages to warn the Greenpeace activists when their land was being bulldozed. For more detail visit 160characters.org: <http://www.160characters.org/news.php?action=view&nid=1752>

Monitoring via mobile phone isn't limited to text messages. Mobile phones' multimedia capacities are being used more and more for documenting human rights abuses. In Malaysia mobile phone footage of police brutality has been circulated online and 'virally' via MMS (read more here: <http://www.globalvoicesonline.org/2006/09/07/malaysia-cellphone-video-captures-police-excess>). To learn more about doing this, take a look at the *People's media* section which focuses on how to use the multimedia features of your mobile phone in your advocacy work.

ISSUES AND PROBLEMS

If you are considering using SMS (text messages) to conduct a survey it can be difficult to secure the trust of respondents. There is a balance to be struck between, on the one hand, ensuring that the data you are collecting is legitimate and therefore your results are valid and on the other hand protecting the anonymity of those who have responded to your survey.

You should also consider that the text message format can be very restrictive because limits on the length of texts mean that it's not possible to offer explanatory notes to users who are struggling with the questions. Survey answers will have to be very short and formatted in a particular way for automated systems to cope with them. Mobile phone SMS surveys typically have a low response rate.

Another problem with SMS surveys is that answering questions by text message will cost respondents money through their phone bills. This may have a negative impact on the number and quality of responses you receive. However it is possible to set up a pre-paid number so that people are able to answer your survey for free.

Before you start your campaign, it's a good idea to take some time to evaluate the effectiveness of providing information through text messages. Some communities you work with, for example young people, may respond better to mobile campaigns whereas other groups might prefer to get information in more traditional ways.

If you have sufficient resources it's worth investing the time in setting up a database of supporters, using tools such as the Organiser's Database (<http://www.organizersdb.org/home>) or CivicCRM (<http://civicrm.org>). Be sure to let people know that you may be using their mobile phone numbers.

If you are using mobile phones for monitoring purposes in areas where electricity supplies are unreliable you should ensure that alternative power supplies (such as solar phone chargers or generators) are available to ensure that monitoring can take place around the clock. When Greenpeace was supporting mobile phone-based environmental monitoring by communities who live in remote forest areas they also supplied car batteries to charge the phones in villages where there was no power supply.

SECURITY CONSIDERATIONS

If you are collecting data for a survey or petition you must consider how to protect the anonymity of those who are submitting information and also find out what your obligations are under the data protection laws in your country. This could affect how you store people's information and how you let them 'unsubscribe' from information updates.



People's media

WHAT IS PEOPLE'S MEDIA?

People's media means ordinary individuals and groups using technology to put together and disseminate information that matters to them. This can be anything from images of demonstrations to reports on human rights abuses.

This section of the toolkit explains ways of using the multimedia capacities of mobile phones to publish reports on local or national events, to take photographs, and to record sound or video. Organisations are also able to use mobile phones to establish new media channels for their content by setting up mobile-friendly versions of their websites. We look at how this is done, what tools are available and how people's media can make the work of your organisation more effective.

In other parts of the toolkit you can find out about using mobiles to update blogs and websites, about getting media off your phone, about enabling participation by using text messaging for monitoring and about how to create a mobile web site.

WHY USE MOBILE PHONES FOR PEOPLE'S MEDIA?

Many mobile phones can document events in photos, sound recordings and even video images. These documents can help your work a great deal.

Because access to mobile phones is very widespread, organisations can support civil society by encouraging people to submit reports, or by collecting and collating the information that people provide and then redistributing it. Photographs and videos are more compelling than verbal eyewitness accounts, and tend to attract more interest. A video or photograph provides an opportunity to engage the wider public in a cause, and can cross over into the wider 'traditional' media.

PEOPLE'S MEDIA IN ADVOCACY WORK

Reporting violence

People can document and report human rights abuses (police or army brutality, for example) or civil disturbances using text messages, photos, audio or video. Photographic evidence can be particularly useful if peaceful demonstrations are violently broken up by the authorities. In Egypt, systematic torture in prisons was captured on mobile phones.

Exposing police torture with mobile phone video

A video of a 13 year old, Mohamed Mamdouh Abdel Aziz, being tortured by Egyptian police was captured on a mobile phone and is being used by activists to press for reforms within the justice system.

The video, which soared across the Egyptian blogosphere in August, allegedly showed the boy hours before he died from his injuries, and not long after he was released by police in the town of Mansoura, 75 miles north of Cairo; local media reported he had been arrested for stealing a few bags of tea a week earlier.

The explicit 13-minute clip is the latest of some dozen amateur videos - mostly from mobile phone cameras - showing systematic torture in Egyptian police stations.

Human rights activists “now have ways to document torture victims. Now we have real credibility,” said Tarek Khater, chairman of the Association for Human Rights and Legal Aid, a non-governmental group that offers free legal services to torture victims.

To view the video - which contains shocking images - go to <http://video.google.com/videoplay?docid=-8554169153312865114>

During political crises, mobile phones may be the only way of reporting what is going on to the outside world. In Burma where the media are controlled by the state and heavily censored, reports about the 2007 pro-democracy protests were filed using mobile phones – read in more detail how Citizen Journalists evaded the censors here: <http://online.wsj.com/public/article/SB119090803430841433.html>.

Gathering evidence

Photos taken on mobile phones can document crimes and abuses, which may be useful in their prosecution.

Reporting damage to the environment

Members of the public can send reports of events such as oil spills, flooding, forest fires or pollution, and submit photographic evidence for analysis or scrutiny.

Raising awareness of a plight or cause

Local groups or individuals can take photographs and make video and sound recordings to inform the wider public about a local or national issue (violence against women in South Africa or 'slum' clearance in Zimbabwe, for example). This material can be collected by a coordinating

NGO and used as part of a wider publicity campaign or sent to traditional media outlets such as television channels and newspapers. Activists from the World Wildlife Fund in Indonesia submitted photos from their campaign to the commercial camera phone picture agency *Scoopt* (<http://www.scoopt.com/Products/Scoopt/26441080822182257.aspx>) to raise the profile of their campaign to protect the Sumatran tiger.

General reporting and education

Technology can help promote cultural awareness. People and groups can create reports about their day-to-day lives and ideas and make them available to a worldwide public. This kind of information helps their supporters, and others, to understand what life is like for people in other places. Mobile phone cameras are ideal for filming in everyday contexts without being too intrusive. On the website *Zexe* (<http://www.zexe.net>) marginalised communities such as Roma people, wheelchair users and motorcycle messengers use mobile phone images to share their views and experiences.

Broadening the global news agenda

People's media can provide a channel for supporters of civil society the world over to bring attention to the events, causes and problems that matter to them. Stories which have been ignored by the traditional media can now find a place in a more open and inclusive news arena, and become available to the traditional media as well. Mobile phone cameras are often able to capture footage in situations where conventional film equipment and news teams do not have access. Advocates can send such material to national and international news channels for broadcast.

Updating a news website with text, photos and videos

The *Voices of Africa* (http://voicesofafrica.africanews.com/site/page/about_voices_of_africa) project was launched in late May 2007 for a preparatory phase. In Kenya, Ghana, Mozambique and South Africa reporters were hired to master the technology and to get experience in uploading texts, photos and videos to a news website. Some of their results and work are being published on this website with features on mobile phones as agents of development, access to water, and youth culture as well as up-to-the-minute news reports from around Africa.

Some of the most striking images captured by the reporters were those of post-election violence in Kenya in 2008. Watch a range of videos relating to the Kenyan elections at Africa News here: http://www.africanews.com/site/list_messages/14325

Creating a media channel

Creating a dedicated, mobile-friendly version of your organisation's website can be a way of broadening the reach of your message. Accessing the internet on a mobile phone is becoming increasingly popular as the data rates charged by service providers become lower and more phones are equipped with wifi connections. The Sri Lankan peace building initiative *Groundviews* (<http://www.groundviews.org/about>) has created a mobile version of its citizen journalism site (<http://groundviews.mofuse.mobi>) so that people are able to access it on the move. A mobile version of the independent news site Indymedia has been created to broaden the reach of this content.

In situations where there is censorship of the news media, text messaging can be an invaluable way of spreading information. In Zimbabwe the radio station *SW Radio Africa* (<http://www.swradioafrica.com>) started sending out news headlines via text message when their signal was jammed by the authorities.

USING YOUR MOBILE'S MULTIMEDIA CAPACITIES

Before you buy a mobile phone for your organisation, make sure it has the functions and capacity you need. For example, if you want to take pictures with your mobile phone and then print them, it should have a capacity of at least 2 or 3 megapixels. This makes a big difference to the image quality. There are many online databases which will allow you to compare the features of various mobile phones before choosing the one that suits your needs.

Video and sound recorded on a mobile phone are saved in a format which is specific to mobile phone files. You will be able to transfer such files to your computer and play them back, but if you want to edit them they will need to be converted into computer-specific files. More details on Open Source and freeware converters that do this are included below.

If you want to use your phone to update a web site look at the guide to using mobiles to update blogs and websites included in the tools chapter of this booklet.

Stills camera

The more megapixels a mobile phone camera has, the better the image quality of the photos taken on it. A two-megapixel camera will allow you print out images of adequate quality (150 pixels per inch) at 8 inches by 10 inches. A three or four-megapixel camera on your phone will significantly improve the image quality, allowing you to make much better prints.

Most mobile phone cameras will allow you to take pictures good enough to be used as small images in screen format on a blog or a website .

It's worth spending some time testing the camera on your phone and transferring your images to the format in which you want to use them before embarking on any significant projects.

A mobile phone camera can be a way of taking pictures in challenging environments without drawing attention to yourself, as you can take photos while you are pretending to make a call.

You can use tools such as Shozu to send photos directly from your phone to a blog or website.

Sound recording

Mobile phones typically record sounds using a file format called .AMR.

In order to use audio material recorded on your phone:

- Transfer the recording to your computer (see the 'how-to' on 'Getting media off your phone' for more information on how to do this.
- Convert the files into a format such as .WAV or .FLAC using a package such as the **Mobile AMR converter** (<http://www.miksoft.net/mobileAMRconverter.htm>)
- Edit the files using a sound editing tool such as free and Open Source software applications like Audacity (<http://audacity.sourceforge.net>) or other sound editing application.

Video recording

Most mobile phones use a file format called 3GP for video.

In order to make short films using footage recorded on your phone:

- Transfer the content to your computer (see 'Getting media off your phone' for more information on how to do this)
- Convert the files to a format called AVI using a video converter such as **Mediacoder** which runs on Windows (<http://mediacoder.sourceforge.net/download.htm>), **ffmpegx** for Mac (<http://www.ffmpegx.com>) and **Gtranscode** for Linux (<http://fuzzymonkey.net/software/gtranscode>).
- Edit the footage using a proprietary video package like those which are bundled with your Windows or Mac operating system.

Some mobile phones come with their own proprietary editing systems installed which means you can edit videos directly on the phone. To create a video which can be circulated on mobile phones either via Bluetooth or MMS (multimedia messaging) the clip should be no larger than 100k, which will give you around 25 seconds.

Mobile phone video quality is fine for creating short videos for broadcast on video-sharing websites or for circulating via Bluetooth or MMS. However only a few very high end phones are capable of producing anything approaching broadcast quality video, which is 30 frames per second with a resolution of 640 x 480 pixels. These phones are very expensive.

How to distribute multimedia material from mobile phones

There are two ways to distribute multimedia material from mobile phones: over the internet and between mobile phones.

Users can add multimedia content to web sites, blogs and photo or video repositories either by uploading their data directly on to the site (see the section on *Using mobiles to update blogs and websites* to find out how to do this), or by first transferring their content to a computer and then uploading it to the internet (see the section on *Getting media off your phone* for more information on how to do this). Mobile phones can be a powerful way of feeding these other technologies, for example by uploading photos of an event or demonstration on to a website.

Multimedia content can also be transferred between phones via Bluetooth or MMS (multimedia messaging). MMS in some cases requires a high-end phone, and is more popular in some countries than others because of the cost and the sometimes restrictive packages that the different service providers offer. Bluetooth has the advantage of being free but requires the two phones to be close together. In countries where websites are heavily censored, video and audio content which challenges the authorities is more easily shared via Bluetooth.

Mobile phone ringtones can also be used creatively, to popularise an issue.

Using ring tones to popularise an issue

Ring tones can be used in innovative ways to not only inform and organise people on an issue but also to get them to engage and participate actively. In the Philippines, for instance, part of an alleged conversation between the Comelec Commissioner Virgilio Garcillano and Pres. Gloria Macapagal-Arroyo has become a hugely popular ring tone on mobile phones - the "Hello Garci" ringtone started circulating online days after tapes of this supposed conversation about vote rigging surfaced in the media.

The 17-second greeting is top of the charts on phones, as Mrs Arroyo struggles with record low popularity. The authorities have barred the media from broadcasting any portion of it, saying it is part of a plot against the president. Even public transport drivers have been warned not to adapt the ring tone to the horns of their vehicles.

An internet site that offered the 'Hello Garci' tune crashed as Filipinos clamoured to download it. Antony Cruz from a text message consumer rights group said its site got more than 70,000 hits in three days.

See the full story at <http://news.bbc.co.uk/1/hi/world/asia-pacific/4120042.stm>

Download the ring tone at <http://pcij.org/blog/wp-files/ring-tones.php>

ISSUES AND PROBLEMS

- It is still difficult to send multimedia data directly from your mobile phone to your blog or website and in order to do this you may have to pay to sign up with a proprietary service provider, which may require you to send multimedia messages via an overseas phone number.
- The quality of video images captured on mobile phones is poor, and unsuitable for most uses unless your organisation is prepared to invest heavily in a top end mobile phone, or you really can use the most rudimentary moving images or sounds.
- Images taken with mobile phone cameras have geographical information embedded in them; this can be a problem when taking images in sensitive situations such as demonstrations. See the security section for information on how to remove this information.
- Sending MMS (i.e. image or video files) from your phone to another phone or website is still extremely expensive in most countries and doesn't always work

SECURITY CONSIDERATIONS

There are obvious security issues for people who use mobile phones to capture video and photographic images or to record sound in sensitive or conflict situations. In addition, the possession of incriminating evidence on a mobile phone could put the owner at great risk in some countries if the phone is confiscated or found. Special care needs to be taken if and when content recorded on a phone is transmitted over the mobile network, as governments and authorities can force mobile phone service providers to hand over records of activity, which could be used to identify the senders and recipients of particular images. In Zim-

babwe, for example, a Telecommunications Interception Bill (passed in August 2007) allows the government to monitor activity across mobile networks and the internet. Since many outlets insist that people buying SIM cards produce identity documents and register their phones with the mobile network, the sources of content transmitted on the network can easily be traced.

Networks also automatically track the location of every mobile phone whenever it is switched on (this is done for the purposes of routing calls and messages, but the information is retained by the server). People can therefore be linked to a specific location at a specific time. If this happens to be within an illegal demonstration, or puts a user within range of witnessing government brutality at a gathering, they could again be put in danger.

Each image that you make on your phone automatically contains details of the location, along with details of the date, time and type of camera or phone used; this is part of the JPG standard, the file format most commonly used for digital images. This information could be useful if you want to prove that you were in a particular place at a particular time to witness an event, or it could be particularly incriminating. Tools are available which enable this 'hidden' information to be viewed and, in most cases, stripped out before the image is forwarded as part of a viral marketing campaign, or posted on a website. You can download a free-ware tool called *JPEG stripper* (<http://www.steelbytes.com/?mid=30>) which will remove this information (metadata) from your images.

These issues are described in more detail in the Security section.



Coordinating and mobilising

Why use mobile phones for coordinating and mobilising?

The fact that mobile phones have made rapid communication easier and cheaper means that large numbers of people can now connect to organise and coordinate their efforts; the work of non-profit organisations is now simpler for the same reasons. Mobile phones are particularly useful because individuals can spread information by forwarding messages from one phone to another. After natural disasters mobile phones have proved invaluable because they are often the only means of communication that still works.

Rallies, demonstrations and other actions can be organised quickly and efficiently and mobile phones can then be used to communicate as events unfold, allowing activists to share information on flash points and the location of police or army units, for example. For many advocacy organizations and their members and supporters, such action alert and quick response tools are vital.

This section of the toolkit looks at ways of using SMS (text messages), voice calls and the messaging service *Twitter* (<http://www.twitter.com>) to support this kind of organising. Twitter allows you to post SMS updates to a website to which people can subscribe.

If you regularly want to communicate with a large number of members using text messages you can use FrontlineSMS or a commercial service such as BulkSMS or Clickatell.

Organising meetings

Mobile phones can be used to organise meetings by forwarding text messages or by a relay of voice calls. It's important to keep an up-to-date record of the mobile phone numbers of your supporters and members (see below for tools that can help you do this). It's also vital to ensure that you allow people to opt out of the messages that you are sending them, for example by texting back the word 'STOP'.

Conference Calls

When users are far apart, or when other communication systems have failed or are being blocked by the authorities, then communication is only possible via mobile phone.

Conference calls can be set up through the internet or through the mobile or fixed telephone networks, and they make it possible for a number of people who are far apart to speak to each other all at once. Conference calls can spare you considerable time, expense and effort

because the callers speak by phone rather than meeting physically in a central location. Many mobile phones have conference call facilities, allowing a coordinator to telephone a number of people from a single mobile phone so that they can all take part in a single conversation, although conference calling in this way can be very expensive.

If you have access to a cheap mobile data package, using a tool on your phone such as Fring or Gizmo can help your organisation communicate more cheaply. Fring allows you to access your Skype account on your phone so that long-distance calls can be made more cheaply, or free, via the internet.

Action alerts and quick response

Mobile technologies can help you to alert supporters and members to upcoming events or actions and to respond quickly to an emergency or disaster.

For example, when there are arrests of activists, or when there is an environmental or human rights emergency, a simple 'phone tree' can help a group of people to relay alerts to each other in order to trigger an agreed response such as contact with the press or an update on a website.

Migrant Workers emergency text programme

MIGRANTE, a migrant rights group, has been using mobile communication in its advocacy for many years now. Overseas Filipino Workers (OFWs) need to be constantly on the lookout for abuses in the workplace and discriminatory laws passed by the governments of the countries they work in.

MIGRANTE initiated an "emergency text" programme which allowed workers to text back their complaints. Many cases of physical abuse of domestic workers by their employers were reported to the hotline. MIGRANTE also communicates with other groups abroad about problems in their respective countries. The emergency text programme has proved useful in informing leaders of migrant organisations whenever such crackdowns on migrant workers are in effect.

In particular, an Anti-crackdown task force was created when the Korean government declared a crackdown on OFWs with expired visas. OFWs in Korea and other countries were warned of possible mistreatment and informed about the help they could probably get from the Philippine Embassy.

Using SMS in an emergency

SMS is a very powerful and efficient tool to organise groups and get quick responses in an emergency, where other means of communication are blocked or censored. General Musharaff's imposition of martial law in Pakistan, also known as a state of emergency, had numerous repercussions in terms of censorship and freedom of expression. The *Society Against Internet Censorship* (<http://dbtb.org/agabbip/>) in Pakistan started blogging live updates on the situation as it unfolded on the ground.

Amid fears of the Internet being taken offline and that there might be a clampdown on independent media in Pakistan, a coalition of various non-profit organisations, left-wing political parties, NGOs and human rights organisations, labour and trade-union federations, academics, students, and concerned citizens formed an umbrella group to resist the emergency in Pakistan.

With the use of print or traditional broadcast media out of the question, these groups turned to text messaging. Not only is SMS accessible by citizens in Pakistan, it also provides a channel to report and provide information to others overseas. In addition, SMS-based reporting and co-ordination system proved to be the most efficient way to provide support for a civil disobedience movement since many activists groups knew that text messages couldn't be censored.

If you are thinking of establishing a response system to deal with political crises bear in mind that it will need to be sophisticated, to be active 24 hours a day, 7 days a week and that it should at the very least allow communication to and from a publicly known central voice/SMS number.

Protest actions

Mobile phones are a crucial tool for the preparation, coordination and conduct of mobilisations, demonstrations and other events. Text messages can be used to publicise demonstrations by sending messages which can be forwarded by recipients to friends and family members and to supporters of the cause in question.

During demonstrations mobile phones can be used for coordination, for example to inform people about changes in route. They can also be used to let leaders know about any arrests as well as to initiate quick action at the police stations where activists may be held.

The 'microblogging' service **Twitter** (<http://www.twitter.com>) can

be updated via SMS and can be used to trigger protest actions such as sending emails and SMS messages. The Zimbabwean group *Sokwanele* (<http://www.sokwanele.com>) have been using their Twitter account (<http://twitter.com/sokwanele>) to post action alerts during the recent post-election violence.

Ringtones can be used as a solidarity tool, allowing people to demonstrate their support for a cause.

Viral campaigning

Viral campaigning means spreading a message from person to person, like a virus. Messages forwarded in this way on mobile phones can work very effectively and quickly to inform and mobilise people. This technique is cheap for the organisation that sets the message in motion, and an important or powerful message can make a great deal of impact when spread virally.

In **China**, members of the public were mobilised by SMS to demonstrate against the building of a chemical plant in Xiamen. A message warning of the dangers of the plant was forwarded to an estimated 1 million people. The call to action read: ***“For our children and grandchildren, act! Participate among 10,000 people, June 1 at 8am, opposite the municipal government building! Hand tie yellow ribbons! SMS all your Xiamen friends!”*** Read in more detail about the mobilisation reported in the *Asia Sentinel* here: http://www.asiasentinel.com/index.php?Itemid=31&id=520&option=com_content&task=view

Mobilising for events and campaigns

Text messaging can be extremely effective for mobilising in local and global campaigns. Text messages can be sent once only or regularly during the lead-up to an event, using Frontline SMS or a bulk SMS service.

Text message campaigning during a global event

The 16 Days of Activism Against Gender Violence is an international campaign whose 2007 global theme was “Demanding Implementation, Challenging Obstacles: End Violence Against Women”. The Women of Uganda Network, *WOUGNET* (<http://www.wougnet.org/cms/index.php>) in collaboration with Womensnet, South Africa and APC-Africa-Women (AAW), conducted an SMS-based campaign. They sent text messages on each of the 16 Days of Activism Against Gender Violence, encouraging individuals and organisations to Speak Out, Stand Out, and Commit to Preventing Violence against Women. There were over

170 participants drawn from 13 countries in Africa, Asia, Europe, North and South America.

Individuals could contribute a short message or slogan on the theme of the campaign. The chosen slogan was sent out via SMS with the individual/organisation that created it credited as the source of the message. People could also send news of the activities and events they organised in support of the 16 Days of Activism. People could register their mobile phone numbers and receive the text messages that were sent out during the 16 Days of Activism. The daily text messages were posted on a blog on the **Take Back the Tech** campaign website (<http://www.takebackthetech.net/blogathon>) or the WOUGNET blog (http://www.wougnet.org/cms/index.php?option=com_mamblog&Itemid=83)

Using mobile phones to mobilise for an action campaign

The International Center for Accelerated Development (ICAD) in Nigeria, with support from FAHAMU and HIVOS, used mobile phones to bring people together for a rally during the Global AIDS Week of Action campaign, which began in April 2008. The participation of civil society organisations, community members, youth groups and stakeholders to do a “stand-up” campaign to present a seven point agenda to government was facilitated by the use of mobile phones. The objective was primarily to prompt government to be accountable in ensuring access to nutritious food, Anti Retroviral Therapy (ARVT) and livelihood options for people living with HIV.

See the section on people’s media for more information on how to use mobile phone cameras to capture images, sound and video safely and securely during actions and demonstrations.

Awareness building through SMS campaigns

Amnesty International-Netherlands (<http://www.newtactics.org/SendingOutanSMS>) used SMS to attract new members, build awareness of the campaign against torture and engage new audiences – in particular young people - in responding to cases of torture through Urgent Action appeals.

About 39 percent of the cellphone campaigns conducted by Amnesty in 2002 were successful. Amnesty used a web based platform to

compose and send text messages. Replies could also be received on the website, which were downloaded and processed as required.

Case study taken from the *New Tactics in Human Rights* (<http://www.newtactics.org>) website.

Text message campaign updates

The EASSI (Eastern African Sub-regional Support Initiative for the Advancement of Women) Women's Day SMS Campaign was run from 25 February 2008 to 14 March 2008 with the support of **WOUGNET** (<http://www.wougnet.org/cms/index.php>). It was intended to raise awareness of the plight of girl children in Kenya and the surrounding region who have suffered as a result of the post-election violence.

People who signed up to this campaign received a text message every day from 25th February 2008 to 14th March 2008. These days were chosen because they fall around International Women's Day, 8th March. The messages sent were daily updates on the peace process and affirmations about girl children in Kenya such as "Leaders should know that even the girl child can spearhead peace-making if given the chance."

Texts that were sent out during the campaign were also posted on the **WOUGNET** blog (view at: http://www.wougnet.org/cms/index.php?option=com_content&task=view&id=100&Itemid=58)

Using SMS to mobilise response to abductions

KARAPATAN (<http://www.phionline.com.ph/%7Ekrptn/AboutUs/aboutus.html>) is the major and most militant human rights alliance in the Philippines. It is made up of human rights institutions and the rights desks of people's organizations, and the regional and provincial human rights bodies all over the country.

To date, KARAPATAN has documented 888 extrajudicial killings and close to 200 enforced disappearances since the start of the Gloria Macapagal Arroyo administration in 2001.

In July 2006, it was reported that elements suspected of being connected to the military had abducted two students, Karen Empeño and Sherlyn Cadapan, from the University of the Philippines (UP) in Hagonoy, Bulacan. Bulacan is close to the capital city, Manila.

Immediately after being informed youth, students, teachers and other support groups in the National Capital Region held a series of protest actions to demand the release of the disappeared.

Significant number of students were mobilized from UP and other universities through mass texting calling for participation in mobilisations in support of the two students. Because of the intense pressure brought by these actions, even UP President Emerlinda Roman wrote to the former Defense Secretary Avelino Cruz, Jr. to ask for an immediate resolution of the case.

Issues and problems

In order to use mobiles effectively for coordinating and mobilising it's vital that your organisation keeps an accurate and up-to-date record of the mobile phone numbers of staff, members and supporters. If you have sufficient resources it's worth investing the time in setting up a database, using tools such as the Organiser's Database (<http://www.organizersdb.org/home>) or CivicCRM (<http://civicrm.org/>). Be sure to let people know that you may be using their mobile phone numbers.

If you are using viral techniques you don't have any control over how many people get your message, or who they are. You can't guarantee that your message will be forwarded on to your intended audience in time for the information to be useful.

While Twitter is an easy tool to use, in most of the world uploading information to it via text message requires sending a costly international SMS to a number in the United Kingdom. Reports have also started to arrive that Twitter is being blocked in some places, such as Dubai.

Security considerations

If you are storing your supporters' details in a database be sure that this data is stored safely and securely and is backed up frequently.

If you are using viral techniques to spread information about a mobilisation you can't guarantee that your opponents won't also receive the message.

Be careful using your mobile phone during demonstrations. If it is confiscated by the authorities they will have access to your contacts. Unfortunately such confiscations are becoming increasingly common.



Fundraising and mobilising resources

INTRODUCTION

Mobile phones are increasingly being used for financial transactions and for marketing and promotion work. They can be used to raise money from the communities you work with.

Mobile phones are now being used by diaspora communities to keep in touch with their family and friends back home and in some cases, as with Mukuru (<http://www.mukuru.com>) in Zimbabwe, mobiles are being used to send fuel and food vouchers home via a text messaging ordering system. Other services are available which allow the remitting of money: M-Pesa in Kenya allows mobile phone users to transfer funds between their phones and those of their families via a simple on-screen menu system.

These M-banking systems are now spreading throughout Africa and the rest of the developing world where they are useful for communities who don't have bank accounts or who need easy access to small amounts of cash. This is especially important in areas with fluctuating currencies and when there is an urgent need to transfer funds to activists. In recent years money was transferred to activists in Kenya and Belarus by this means at times of political instability. In Kenya after the post-election crisis in early 2008 an activist was able to distribute a donation of money by purchasing phone credits and dispersing them to colleagues in need.

Mobile airtime vouchers can be used to reward volunteers, or accepted as donations to help with the day-to-day running of an organisation.

In some countries, mobile phones are being used to promote the work of charities (through text alerts, or the creation and distribution of ring tones, wallpapers, games and mobile internet sites, for example). At the same time, some organisations have begun using mobiles for fundraising by setting up short codes (shortened versions of mobile numbers, usually 5 digits to make them easier to remember) which people can text to make a donation. Mobile short codes are usually used as part of an appeal, as happened with the Asian tsunami in 2004 (over US\$2,000,000 was raised in the UK alone through mobile donations). Mobiles can also be used to distribute information, to raise awareness of an organisation's activities, to identify potential donors and to recruit members.

HOW CAN MOBILES HELP FUNDRAISING AND RESOURCE MOBILISATION?

Mobile technology has opened a new channel for communication between non-profit organisations and the public. Mobile phones make possible direct, instant and cheap communication with supporters and the wider public. People tend to read text messages (although reply rates do vary), unlike spam (unwanted email messages). The restrictive nature of text messaging – 160 characters is the maximum length of a single message – means that they are good at delivering very concise messages, although it is a challenge and can be something of an art form to condense more complex messages into such a small space.

With so many mobile phones in the hands of so many people, responses to appeals can begin almost instantly. Mobile phones are available 24 hours a day, 7 days a week, unlike other media which require the user to be in a certain place at a certain time to see an advertisement, hear a radio broadcast or watch a television program. Interestingly, mobiles are also being used to attract users to more traditional media via text messages that tell people to be in a certain place at a certain time or to watch a certain TV station or to go to a particular website and enter a code to see if they have won a prize. Mobile technology, as has been discussed in other sections of this toolkit, is a strong complementary technology and should not be considered a replacement for other media.

Mobile phones can be used in a variety of ways to assist with fundraising, awareness-raising and the recruiting of supporters. These include:

Text campaigns

Members of the public can be encouraged to engage further in a cause or campaign by signaling their support via text message. Subscribers can then be sent regular news updates by text and ultimately encouraged to become members or donate funds to the organisation. Individuals can also be 'drawn in' with details of a special offer, as was done in India by Greenpeace in 2005 (selected mobile users were given the chance to receive a free tree as part of a 'greening the city' campaign. A total of 149 new members were recruited in the process).

Donations via SMS

Disaster Emergency Committee 'Asian Tsunami' Appeal

A huge natural disaster was followed by one of the biggest fundraising appeals of all time, which involved the widespread use of mobile phones to collect donations from members of the public.

Operators joined forces create a no-fee donation mechanism which allowed mobile users in the UK to text the word “DONATE” to a short code with the full amount donated to charity. Read more about the appeal here: <http://about.virginmobile.com/aboutus/media/news/2005/2005-01-25/>

During the recent *Live8* (<http://www.live8live.com/phone>) anti-poverty concerts held as part of the Global Call to Action against Poverty, mobile phones were central to spreading news of the events and text messaging was used by members of the public in the UK to enter a ticket lottery with profits – almost \$6 million – going towards Live8 projects in the country. The UK Live8 fundraiser remains the most successful mobile fundraising campaign to date.

Premium SMS campaigns

A Premium SMS is a text message, usually sent to a short code, which costs the sender a higher-than-normal rate to send (often at ten or twenty times the cost of a standard message). Premium SMS service providers are able to debit money from mobile accounts and pre-pay balances, so tight controls are in place governing who can use or create the service. As a result, mobile operators maintain strict control on the issuing of premium SMS numbers. Premium SMS can be a quick, instant and effective way of raising funds, and its use is now commonplace in the non-profit world, particularly in direct appeals (for natural disasters, famine, and so on).

On Nelson Mandela's recent 90th birthday his charitable organisations set up an international premium SMS service, allowing users to text in their own birthday message. Well wishers text their own message to a specific short code and receive a return thank you message complete with unique PIN allowing them to view their message securely. Read more about the Happy Birthday Mandela project at: <http://www.happybirthdaymandela.com/frontHome.seam>

Clickatell and BulkSMS have Premium SMS services available but currently the only African countries they offer coverage to are South Africa and Namibia. You should check with Bulk SMS providers in your country to see whether they offer this service.

Airtime vouchers

In many countries airtime vouchers are available for pay-as-you-go mobile phones. Donations of airtime can be used as a way of raising funds for an organisation or as a way of reimbursing volunteers.

WAP or mobile internet sites

WAP sites or mobile internet sites are special websites designed to be looked at on mobile phones. Mobiles don't have full keyboards and have very small screens, so displaying information in a readable way and allowing users to interact with the site takes some work. You should also consider whether your target audience is actually accessing the internet on their mobile phones. This is becoming increasingly popular as data costs fall but is still a marginal activity.

A number of charities have successfully implemented mobile internet sites to help raise money through the sale of games, ringtones and wallpaper images, raising considerable sums of money in the process.

Having a mobile website can help NGOs, as users are able to access information about your organisation or project at any time and in any place. You can send a link by text to your database of supporters - such text messages can contain a hyperlink, much the same as the links used on the internet, which can automatically take users to your website on their mobile phone. Once there, users can be asked to subscribe to newsletters or text alerts (for SMS campaigns) or they can purchase ringtones, wallpaper images and games, if that content is available for purchase (sometimes it is given away as a gift or a "thank you for your support" gesture - another useful fundraising and/or awareness raising strategy).

Web sites created specifically to be accessed on mobile phones need to be carefully thought through and planned. Users are generally unable or unwilling to spend too much time clicking on link after link to find what they are looking for, and as a result many mobile internet sites are scaled-down versions of larger websites (they are also called 'microsites'). It is important to remember that many mobile subscribers pay a small charge for each screen of data they download; if they can't find what they're looking for quickly they may log off and not return.

A number of tools and services are available to help in the creation and maintenance of a mobile internet site, such as Wapple.net, Nokia Mobile Internet Toolkit, and MobiSiteGalore.

Mobile content

Non-profit organisations can take advantage of the multimedia features available on many of today's phones and develop and market a range of mobile content in order to raise funds and awareness for their cause. Games, ring tones and high-quality images can be produced and made available to users via SMS, picture messages or WAP (see above). Although mobile content is a strong awareness-raising and fundraising tool, developing content can be a challenge technically.

Supporting a campaign through ringtones, wallpapers and information services

Fauna & Flora International (FFI) set up wildlive! UK to provide conservation news and information including field diaries, discussion forums and SMS competitions and alerts to Vodafone live! users. In addition, a range of animal ring tones and wildlife wallpapers were sold on the platform, along with a range of conservation-based games.

wildlive! adopted a combined web- and WAP- approach (it provided conservation content on the internet and mobile phones). News, diaries, discussions and other content were added to the website which was then in turn made accessible for mobile devices. A community of interest was created, allowing users to contact others with similar ideas and views and a wide range of conservation-based resources and downloads were made available online. During the first year approximately \$200,000 was raised through the service. See <http://www.kiwanja.net/wildlive!.htm> for further details.

The *Center for Biological Diversity* (<http://rareearthtones.org/ringtones>) offers endangered species ringtones and phone wallpapers—a collection of high-quality, authentic sounds and images of some of the world's most threatened birds, owls, frogs, toads and marine mammals.

Viral marketing

Mobile phones are very useful tools for viral marketing, where novel or interesting messages are passed informally between friends. This can raise awareness of your organisation's activities at a very low cost and can form part of a broader fundraising campaign. Because users may pass your message to more and more people, the reach of messages can grow exponentially. Viral marketing is usually random, ad-hoc and unstructured compared to more organised advertising and marketing methods, with users able to receive text messages (or other mobile content, such as photo images) and forward them onto others who then do the same in what is often called a 'trusted network'. Trusted networks present an opportunity for non-profit organisations to spread their message further, reaching out to the wider public and beyond their usual audience. The reach of mobile phones provides significant opportunities to reach this new audience and to encourage further participation through memberships and donations.

Mobile payments

Organisations such as PayPal (a financial transactions company) now provide a mobile-based service, allowing PayPal account holders to make payments and 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 - in this case with the sum paid being deducted directly from the users pre-paid balance.

M-Pesa in Kenya is one of the better known m-banking services, run by local operator Safaricom, and other services in other countries such as MTN’s “Me2You” in Uganda allows mobile owners on pre-pay to transfer call-time between phones.

Handset recycling schemes

Over the past few years, a number of specialist recycling companies have emerged, taking advantage of new regulations which require that a certain percentage of redundant mobile handsets be recycled on environmental grounds.

Nokia have a handset recycling scheme currently operating in five African countries; Uganda, East Africa, Nigeria, Senegal and the Ivory Coast.

A number of companies now run schemes to collect old handsets, selling them and then passing on the revenue to the participating charity. In countries with mature markets, handset recycling can be a useful source of additional income for non-profit organisations, particularly those with large membership bases (such as Oxfam, who have raised over \$600,000 through their UK-based handset recycling scheme).

Many other mobile operators around the world provide facilities for unwanted handsets to be recycled and these schemes are often run through private companies. Some accept phones on behalf of a charity and donate either a fixed amount or a percentage of the value for each one they receive.

Links on SMS fundraising

For more information on how text messaging has been used in fundraising around the world look at: http://www.textually.org/textually/archives/cat_sms_and_charities.htm

ISSUES AND PROBLEMS

Access to mobile internet

Access to mobile internet sites is currently limited.

Cost and income

Due to the way mobile operators closely control access to their payment mechanisms, and to the high rate of commission that many take on mobile payments (often in the region of 50%), returns on mobile campaigns may be lower than expected. The cost of running such campaigns can be high, with budgets needed for outgoing messages, the rental and setup costs for short codes and keywords and the staff time required to process and audit income. There may also be an additional cost for follow-up messages (to thank people for their support or to update them on the campaign, for example). It is generally advisable to try any new mobile campaigns on an existing membership base to test response and effectiveness before opening it up to the wider public.

Transparency and opting out

It is important when running a mobile fundraising campaign to inform the end user of how much of their donation is 'lost' to operator and other costs (as described above). In some countries this disclosure is compulsory by law, which makes sense in light of the high costs associated with running these campaigns. In addition, subscribers to your services – receiving news alerts, for example – need to know how to opt out should they wish, if they want to cancel their subscription to the service and stop receiving messages.

Integration

Mobile phones as tools should never be considered in isolation from other ways of campaigning such as the internet, newspapers, radio, television and street canvassing. Mobiles are a great complementary tool, but only a few campaigns will work on mobiles alone.

Part II SECURITY



Security

Introduction

The small size, relatively low cost and constant mobility of mobile phones make them invaluable for advocacy work but also make them more likely to be stolen, temporarily misplaced, lost or confiscated.

The use of mobile devices creates new security risks which NGOs and advocates must recognise in order to protect themselves, their organisations and the people they work with. This section of the toolkit will show you how to minimise these risks.

Mobile phones carry a vast amount of data - not just your contacts but also logs of calls made and received and text messages sent and received - see below for more information on the records carried on your phone. By virtue of carrying a list of all your contacts your mobile phone shows exactly who you are working with. If you are working in a sensitive area this can make you and everyone else in your network vulnerable.

As an organisation providing services you should also be aware of your responsibilities to users of these services. If you are storing people's contact information you should find out what obligations you have under your country's data protection laws to store these details safely and to delete information when requested. You should also be aware that your mobile phone service provider or your bulk SMS service provider may turn over data to the authorities if requested. Activists in New York running a text alert service on a demonstration were recently the subject of legal action to force them to hand over records revealing the content of messages exchanged and identifying people who sent and received messages (read more at: <http://www-tech.mit.edu/V128/N15/txtmob.html>). You should also be aware that service providers may refuse to transmit messages in support of controversial campaigns, as in the case of the operator Verizon who refused to carry pro-choice messages on behalf of a group in America (for more detail go to: <http://www.textually.org/textually/archives/2007/09/017441.htm>).

TOP TIPS

- When using your phone, **remain aware of your surroundings** and do not use it in crowded areas or where you feel unsafe.
- The 15-digit **serial or IMEI number** helps to identify your phone. You can find out a phone's IMEI number by keying ***#06#** into most phones or by looking behind the phone's battery. Make a note of your phone's IMEI number and keep it separate from your phone, as this

number could help the police to trace ownership quickly if it is stolen.

- If you get your mobile phone back after it has been lost, stolen or confiscated be careful to ensure that monitoring software has not been installed on the phone.
- Always use your phone's **security lock codes or PIN numbers** and do not reveal the numbers to anyone.
- If you are concerned about being monitored or your work is very sensitive, buy an anonymous SIM card such as a pay-as-you-go card, using cash, if possible. Consider changing your number regularly.
- If you are concerned about security make it routine to delete the information on your phone. Check the settings on the phone to see if can be set so that it does not store call logs and outgoing text messages.
- If you do not want your movements to be traceable consider turning the phone off at certain times. From time to time, leave the phone in one place while establishing your presence elsewhere, so that activity on the phone cannot necessarily be linked to you.
- If you're not concerned about the sensitivity of your communications and activities then you could consider **registering your phone with the operator** because then if you report your phone stolen, the operator should then be able to stop further use of your phone.
- **Disable Wi-Fi and Bluetooth** when you're outdoors. These functions are easy to exploit for sending malicious code or viruses. It's also possible that sensitive information could be intercepted by a sniffer when these functions are enabled. The safest place to use these functions is at home or in trusted locations.
- **Watch for unauthorized GPRS connections.** If you find your phone is auto-connected to GPRS (General Packet Radio Service), then your mobile might be infected with a virus that is sending your data to other parties. If you discover this problem, disconnect the device immediately and install anti-virus software to remove the malware.
- If you're not working on sensitive activities and you don't mind being traced if you lose or misplace your phone, then you could consider security-marking the battery (and phone) with your postcode and street number or the first two letters of your house name.

It's a good practice to make frequent **backups** of data stored on mobile devices, including your address book.

You can use three different methods to back up data from your phone onto your computer:

- Infrared connection
- Bluetooth connection
- The cable provided with your phone

Once the connection with your computer is established you can back up the data either using the software provided with your phone or a free/Open Source backup application downloaded from the internet. You can also use a SIM card reader which copies the information from your SIM card to a separate device.

RECORDS ON THE PHONE

There are a number of records that are kept on a mobile phone by default:

- o Call logs – calls made and received: number called, date, time and duration of the call.
- o SMS - text messages sent and received
- o Photos – album of pictures you have taken
- o Calendars, to-do lists and other notes
- o Contact information and other stored data

Your call records and text messages can also be accessed by your mobile service provider. The service provider may keep these records for a long time.

'Remote wiping' software exists which will allow you to remove all the data from your phone if it is lost - this is currently only available in the corporate environment but may spread to the not-for-profit sector.

Call Logs: Depending on the model of phone, it is possible to turn off the automatic logging of calls. Don't forget that Caller ID means that when you call someone from a mobile phone, the person you are calling can see your phone number, and that this information is stored on their phone even if the call is not answered.

SMS: text messages sent and received are stored in the phone by default. Deleting messages manually is a simple security measure, but if the authorities are taking investigations very seriously these records may be obtained from the mobile operator.

Photos: Using your camera phone at an event? It is a good idea to upload photos straight to a remote server from the phone and then delete them. Each image that you make on your phone automatically contains details of the location, along with details of the date, time and type of camera or phone used; this is part of the JPG standard, the file format most commonly used for digital images. This information could be useful if you want to prove that you were in a particular place at a particular time to witness an event, or it could be particularly incrimi-

nating. Tools are available which enable this 'hidden' information to be viewed and, in most cases, stripped out before the image is forwarded as part of a viral marketing campaign, or posted on a website. You can download a freeware tool called *JPEG stripper* (<http://www.steelbytes.com/?mid=30>) which will remove this information – called 'metadata' – from your images.

Contacts and other stored data: All contact information stored on a mobile phone is available should the phone be confiscated, lost, temporarily mislaid or stolen. Consider what data you need to store on your phone, especially when you work in dangerous or oppressive situations.

MONITORING AND SURVEILLANCE

Location-Based monitoring

A phone that is switched on can be located. The knowledge that you (or at least your phone) were in a particular place can be either positive or negative depending on the circumstances.

Mobile phones can be used to locate you and your companions in a particular place because your mobile is a tracking device when it is switched on. This information is kept by the provider and can be accessed in real time or after the fact. If your work is unpopular with the authorities this can make you very vulnerable - but one benefit of this is that your phone may provide an alibi to show that you were not elsewhere. Commercial services are now available that will allow you to track a mobile phone for a small fee from a website.

How tracking works: for a mobile phone to be able to communicate with the network, the server keeps track of which transmission mast your phone is connected to. A phone cell is made up of several masts and the information they transmit is used by operators to determine the approximate location of any nearby phones. In large cities this can locate your phone within a couple of streets. This is occurring all the time your phone is turned on whether it is used to make calls or not.

Monitoring of communications

To understand the sensitivity of mobile phone communication it's worth bearing in mind that it is much harder to use a mobile phone anonymously than it is to surf the internet anonymously.

To undertake surveillance of phone conversations and text messages, governments have to work with the mobile operators and service providers.

However it is quite easy for them to monitor mobile phone use by:

- Listening in to your calls
- Getting access to call and SMS (text message) records
- Use of monitoring devices.

In some countries it is relatively easy to get access to call and SMS records through:

- Bribery
- The police
- Corporations
- Government officials

Surveillance agreements may exist between your government and the telecoms operators in your country, so if you are working in a sensitive area be sure you understand as much as possible about surveillance agreements in that area. Governments have been known to work with mobile operators to search both voice calls and texts for key terms.

In some countries the mobile phone network has been shut down by the authorities during election periods. For example, in response to the effective use of text messages to communicate with and mobilise supporters by the NGO *Kinijit* (<http://www.kinijit.org>) after the contested election in Ethiopia in May 2005, the government shut down SMS services. The services were only restored in 2007.

Mobile phone conversations are not encrypted and it is currently expensive to encrypt calls - however these tools are expected to become cheaper over the next few years. Conversations between Skype and mobile phones are not encrypted either.

Phone as Radio Microphone

Software can be installed on your phone remotely without your knowledge and then the phone used as a microphone/bugging device. A commercial version that can listen to conversations in the region of the phone is also available for purchase although it does not include remote installation. Anyone who had access to your phone could install such software.

Without installing any software a phone can also be set to work as a microphone by setting automatic call pickup and disabling a ring tone - by this means someone can call a remote phone and listen in to whatever is going on in its vicinity.

Pre-Paid or contract

If the account you have with a phone company is a monthly account, a record of all calls made and received with the operator is kept and can be accessed long afterwards. Records held include billing, which

services were used, where you were when making or receiving calls, numbers called and the numbers from which you received calls.

It is possible in some countries to obtain a pre-paid SIM card without providing any personal information but this is becoming increasingly difficult. For added security, it may be advisable to pay with cash and choose an outlet not covered by CCTV.

Using a credit card to pay for your mobile phone will also create a data trail to you, which you may want to avoid.

SMS SECURITY

Text messages are inappropriate for confidential transactions because they can be accessed by anybody who gets hold of the phone. If you are worried about security you may want to consider using software such as **CryptoSMS** (<http://www.cryptosms.org>) or **SMS007** (<http://www.sms007.cz>) which are commercial SMS encryption tools which can be installed on your phone. Unfortunately CryptoSMS seems only to work on new 3G phones and is challenging to use so you should not install it unless you have very serious security concerns.

CONNECTING YOUR PHONE TO A COMPUTER

There are particular security risks associated with connecting your phone to your computer in order to transfer information.

Infrared security

Infrared provides a secure and simple way to transfer and synchronise data between your phone and your computer. In order for infrared communication to work properly, infrared devices must operate on a line-of-sight basis. They must be placed at a 30-degree angle from each other and no farther than one metre (approximately 40 inches) apart. Because infrared operates over such a short distance and at a narrow angle, it is relatively difficult for an attacker to intercept data that is sent over infrared.

However, infrared does not provide data encryption, so take the following precautions to ensure that data sent over infrared is not intercepted:

- Do not enable infrared image transfer.
- Infrared image transfer is disabled by default (that is, the option to use
- Wireless Link to transfer images from your device to your computer is disabled). If you enable this option, all of the incoming files that are sent over infrared image transfer are automatically accepted. Because incoming files might contain harmful programs, ensure that the files

originate from a trustworthy source. Do not open files if you cannot verify the source, do not recognise the file format or are unsure of the content. Instead, delete the files immediately.

- Align infrared devices so that they are between 0.1 metre (approximately 4 inches) and 0.5 metre (approximately 20 inches) apart when you establish an infrared link between two devices. Although the transfer can take place at a distance of up to 1 metre, placing the devices closer together minimises the risk of interference from an outside infrared device.
- Ensure that all infrared devices and data sources are trustworthy.
- Finally, if you are transferring data via infrared to another person, conduct the transfer in a private location whenever possible.

Bluetooth security

Bluetooth provides a way to connect and exchange information between devices such as mobile phones, PCs, printers, digital cameras and video game consoles.

Bluetooth lets these devices communicate with each other whenever they are in range. The devices use a radio communications system, so they do not have to be in line of sight of each other and can even be in separate rooms, as long as the transmission is powerful enough.

A common task that involves Bluetooth security for most users is the “pairing” of devices. By default, Bluetooth communication does not require the two devices to exchange security information or ‘authenticate’ and thus almost any device can freely connect to another. However, to access a particular service such as a dial-up account, a voice gateway, or to do a file transfer, some sort of authentication is usually required.

The process of authentication is usually done during the pairing process by entering identical PIN codes (passkeys) on both devices. Once users have entered their correct PIN codes, both devices will generate a link key, which can be stored in the device’s memory and will allow it to skip the authentication and authorisation process when it attempts to communicate with the other paired device in the future.

Unfortunately for Bluetooth users, the process of authentication and authorisation to access services is not always correctly implemented by manufacturers. Such weaknesses have already affected several Sony Ericsson and Nokia mobile phones, allowing malicious hackers to steal phone books, photos and calendar information, or to make phone calls or send text messages using other people’s mobile phones. This is because authorisation is not required for two important services on these phones.

SMARTPHONE SECURITY

Smartphones are mobile phones with more capabilities than a typical mobile phone, often functioning like a PC.

Smartphone users can download a number of productivity programs, connectivity programmes, games, and utilities including freeware and shareware programmes from untrusted sources. The programmes can be easily installed without network administrators being notified. These programmes may contain Trojan horses or other malware that can affect the user's hand-held device.

There are few security tools available for many of these devices. In some cases users are unable to track security attacks on these phones.

There are several new operating systems and applications running on these devices that have not been thoroughly tested by the market to expose any potential vulnerabilities.

Hand-held devices have a number of communication ports from which they can send and receive data, but they have limited capabilities for authenticating the devices with which they exchange data.

Windows Mobile and Win32 (PC based) software is developed in similar ways, so it's easy for authors of Win32 malware to convert their malware for use against mobile devices.

Malware is malicious software, developed for the purpose of harming computers; examples include computer viruses, worms, Trojans, and spyware.

How to Prevent Mobile Malware Attacks

The best way to protect your mobile device is to keep malware off your phone in the first place. Use the same precautions for your smart phone as you would for your Windows laptop or desktop computer.

Look at the Tactical Tech ***Security NGO in a Box*** site for more information on this issue and some suggested tools for your laptop or desktop computer. <http://security.ngoinabox.org/html/en/antiviruses.html>

Install mobile anti-virus software

The majority of large security software vendors now have a mobile version of their anti-virus solutions. If you have a smart phone you should give it the same protection you give your desktop system.

ADDITIONAL SECURITY RESOURCES

Security for Activists (<http://www.activistsecurity.org>): A Practical Security Handbook for Activists and Campaigns.

A Guide to Mobile Phones (http://www.freebeagles.org/articles/mobile_phones.html): A short guide to using mobile phones safely and securely for activists.

A Brief Introduction to Secure SMS Messaging in MIDP (http://sw.nokia.com/id/5274b81c-12d0-43bb-8d89-26f6a1ae111f/A_Brief_Introduction_to_Secure_SMS_Messaging_in_MIDP_en.pdf): Nokia developer guide

ChameleonSMS (<http://www.chameleonsms.com>): Encrypted SMS (commercial with free trial)

MultiTasker (<http://www.youpark.com/productdetailscb?productID=162>): Encrypted SMS (commercial with free trial)

SecureAge (<http://www.transparity.com/webpages/mcomp3.shtml>)
Encrypted SMS (commercial with free trial)

SMS 007 (<http://circletech.net>): Encrypted SMS (commercial with free trial)

ADDITIONAL MATERIAL ON BLUETOOTH VULNERABILITIES

For more information read: <http://www.thebunker.net/resources/bluetooth>

Information about EXIF data

Some information on the hidden data files which are embedded in camera phone pictures can be found at: <http://www.exif.org/>

Mobile Phone Spying

There is detailed information on how phones are used as spying devices here: <http://www.mysecured.com/?p=127>

Mobile forensics information

SIM Card Forensic Analysis is worth thinking about in terms of how much data is hidden on your phone; more information is available here: <http://www.mobile-phone-analysis.com>. This can give us:

- The phone number (MSISDN), this is dependent on the set up of the
- handset, and can be altered by the user.
 - The network provider
 - The last cell site connected to (LOCI).
 - Any stored phonebook entries (Abbreviated Dialling Numbers (ADN)), if the SIM is set to store this information.
 - Last Dialed Numbers, if the SIM stores this information.
 - Text messages (including deleted messages), if the SIM is set to be used as a store.
 - IMSI (International Mobile Subscriber Identity): A unique number that is allocated to each SIM

MOBILE PHONE HANDSET FORENSIC ANALYSIS

This can give us:

- The software version of the phone (similar to the operating system).
- The IMEI (International Mobile Equipment Identity) - This is set during manufacture and is a unique string of 15 digits. This can be found on the back of the phone within the battery compartment, and also by typing *#06#. These should match; if they don't then someone has been tampering with the phone.
- Phonebook
- Speed dial numbers
- Phone settings and profiles
- Pictures
- Audio recordings
- Videos
- Call logs
- Java applications
- Calendar/Organiser
- WAP settings

Undelete SMS

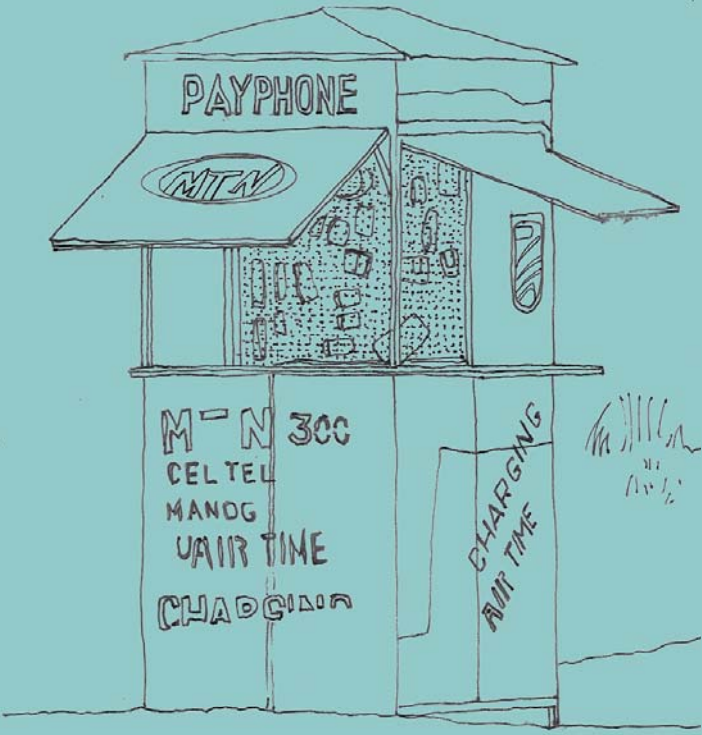
Software that is available online for retrieving text messages from a SIM card – read more here: <http://vidstrom.net/stools/undeletesms>

Cell phone investigation toolkit

Read more about Creating a Cell Phone Investigation Toolkit and the Basic Hardware and Software Specifications here: <http://www.search.org/files/pdf/CellphoneInvestToolkit-0807.pdf>

With thanks to Mike Grenville from [160characters.org](http://www.160characters.org) (<http://www.160characters.org>) for permission to reuse excerpts from his 'Security Guide for Mobile Activists'.

Part III
Resources



III. Resources

Tools

INTRODUCTION

This section of the toolkit will present a few tools and services that can be useful in mobile advocacy. There are hundreds of tools and services available but we've worked with a team of mobile phone experts and advocates to test, review and recommend a selection, to give you an idea of what is possible. The tools that we've selected are not all designed to be used directly on mobile phones: for example, we have included interactive voice response systems that people can call from their mobile phones. More detailed instructions on setting up and using particular tools can be found in the next chapter, **How to use some of these tools**.

Tools are software applications that are installed on a phone or on a computer, and services are commercial services available through the internet, such as online systems for sending large numbers of text messages. We have tried where possible to include tools based on Open Source software which are available free of charge.

We've divided the tools and services according to the equipment and services that you need to have in order to use them, either:

Just a mobile phone, or

A mobile phone and a personal computer, or

A computer connected to the internet or a server, or

An internet connection, a mobile phone and a credit card

The mobile telephony landscape is changing rapidly. Operating systems and mobile handsets are evolving to incorporate new functions, such as GPRS systems for tracking your geographical location. The mobile operating system is opening up with the development of the Google Android platform (for more detail visit <http://code.google.com/android>).

Mobile advocacy tools designed to be installed on a server or a desktop computer are currently fairly challenging to use and often require Linux administration skills. Because this is a fast-developing field it's likely that in a few years more accessible tools will have been developed, including some designed specifically for use by NGOs, such as the Freedom Fone which will provide a spoken-voice database, allowing users to access news and public-interest information via land, mobile or Internet phones.

Factors to consider

Before you can use a tool you need to find out whether it will work on your computer or mobile phone.

Different mobile telephony applications may need to be installed on different pieces of equipment: Fring, which allows you to access your instant messaging or Skype account on the move, is installed on a phone, whereas FrontlineSMS, which is used for sending and receiving large numbers of text messages, is installed on a computer. Some applications will require a particular sort of phone or computer: for example, to use Episurveyor you will need a PDA (Personal Digital Assistant).

Computers run using three main operating systems: Windows, Mac or Linux. Many tools will work only on one or two of these systems, so you should check that your version of the application, and any additional software you want to use, is compatible with the system that runs your computer.

Because applications for mobile phones also run on different operating systems (the main ones are Symbian or Windows Mobile), the same problems of application compatibility may arise as with computers. Make sure that the application you want to use will run on your phone's operating system.

To use the tools which help your phone and your computer communicate you will need a special cable to connect your mobile with your computer. To use some of these tools you may also need access to the internet, a phone line or a spare USB port.

TOOLS ON A MOBILE PHONE

Applications such as Shozu will allow you to publish and share multimedia content, such as photos, from your phone on to websites such as blogs, social networking or photo-sharing sites. Some applications are used for communications: Gizmo or Fring allow you to access your instant messaging or Skype account to send text or voice messages. If you are using tools such as Gizmo, Fring or Shozu you should bear in mind that they send information via mobile data connections, which can be very expensive.

Installing applications on your phone

There are two ways of installing applications on your phone: directly from the internet via a browser on your mobile phone (which can be expensive and relies on you having a reliable data connection), or from your computer.

To install applications from your computer you download the application to your computer's hard drive first and then transfer it to your

mobile phone. There are two main ways of accomplishing this transfer:

Using a wireless Bluetooth or infra-red connection. To do this, both your mobile phone and your computer must support this type of connection.

Using a data cable to connect the USB port of your computer to your mobile phone.

What tools are available?

Fring

Use Skype, or your favourite instant messaging application, on your mobile phone.

Fring is a mobile application which uses VOIP (Voice Over Internet Protocol - the technology that makes the transmission of voice calls over the internet possible) to allow instant voice and text messaging to other users of the application and to users of other similar PC-based services including Skype, Google Talk, ICQ, MSN Messenger and Twitter. It uses a 3G or GPRS internet connection from your phone, or Wi-Fi if your phone has this function.

Gizmo

Make cheaper phone calls and log in to your favourite instant messaging application on your mobile phone

Gizmo is a communications application which is installed on your phone. You can also use it to send voicemail messages via email. Gizmo requires a data connection to work so you need either a 3G or GPRS data connection from your phone or Wi-Fi. A version is also available for your computer.

Shozu

Publish multimedia content on the internet from your mobile phone

Shozu is an application which you can install on your phone to allow you to upload videos and photos from your mobile phone to your online sharing sites, blogs (such as your Wordpress blog), email account and newsrooms.

TOOLS FOR MOBILE PHONE AND CONNECTED COMPUTER

The mobile phone applications discussed here, such as FrontlineSMS, run 'locally' on a computer, and can be accessed without using the internet or any other computer network.

Conduct surveys on your phone

Episurveyor

Collect data on your mobile phone and send it back to a laptop or other computer.

EpiSurveyor is a free Open Source tool which runs on Personal Digital Assistants and will soon be available for other types of mobile phone. It allows you to design a form for a survey on your computer and send it to your PDA. Then you conduct the survey using your PDA and send the information that you've gathered back to your computer. You can collect the data from several Personal Digital Assistant devices and combine it into a single table, which can be exported to be analysed.

Other data-collection tools are available for mobile phones but they are not generally Open Source.

SMS hubs

An SMS hub is a stand-alone system which allows you to send and receive large numbers of text messages via the mobile phone network, without needing to be connected to the internet or to any other computer network.

You need a laptop or desktop computer with a number of mobile phones or GSM modems attached. A GSM modem is a small device without a keypad or screen that you connect to your computer. It works like a mobile phone, but is controlled through the computer. 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. Because SMS hubs do not need to be connected to the internet, they are very useful for NGOs working in areas where access to the internet is not possible or is unreliable.

What are the advantages of using an SMS hub?

It is quick, cheap and fairly easy to set up an SMS hub, which makes them ideal for organisations that have few resources and low budgets or for those that work in sensitive areas or in countries with repressive dictatorial regimes. One user of FrontlineSMS comments:

“FrontlineSMS has opened up the seemingly complex world of automated SMS message handling to a novice SMS user like myself. Based in Africa in a country where broadcast technology is controlled by a dictatorial government, this software has enabled me to embrace SMS messaging to communicate with the public at large. Since the software does not require me to set up any special relationships with carriers or internet service providers I am can run my project without drawing unnecessary attention to myself - a good thing in this neck of the woods”

One of the advantages of SMS hubs is that since messages are sent using a local mobile phone and SIM card, users are able to reply through their phones, something which is not always possible if you use web-based messaging tools. (SIM cards are small plastic chips which your network operator sells to you and which allow you to access the mobile network). Web-based group messaging services, such as Clickatell or BulkSMS, are not appropriate for organisations working in places with unreliable telecommunications infrastructure or no internet connectivity at all. They also require a credit card. SMS hubs get around this by using the mobile phone network to send and receive their messages, so the messages are paid for through your SIM card

ISSUES TO CONSIDER WHEN USING SMS HUBS

Cost implications

Systems which send messages via an attached GSM phone or modem generally cost more to run than web-based alternatives. You pay for each message that you send 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. Web-based SMS aggregators, through which you can send large numbers of messages more quickly, are cheaper.

Network and SMS constraints

Some networks limit the number of times you can send the same text message, to prevent illegal spamming. Text messages cannot be more than 160 characters long, which limits the amount of information you can transmit.

Security

Very high levels of mobile phone activity through a single phone number could attract the attention of the authorities, which could prove dangerous in countries with dictatorial regimes where people are often required to register their phone numbers. For further details of the security implications of using text messaging, see the section on security.

What SMS hubs are available?

FrontlineSMS

FrontlineSMS is a software application for desktop and laptop computers which does not require an internet connection and which works with any Global System for Mobile (GSM) network.

For more information visit: <http://www.frontlinesms.com>

SMS Server Tools 3.

SMS Server tools can provide a system for sending and retrieving text messages and also allow you to manage some of the functions and configurations of your GSM phone or modem remotely, from your computer.

For more information visit: <http://smstools3.kekekasvi.com/>

TOOLS FOR MOBILE PHONE PLUS A COMPUTER CONNECTED TO THE INTERNET OR TO A SERVER

A server is usually a dedicated desktop computer running only the programmes (server applications) which help the applications on connected computers to work. Servers are often unattended and are left running for extended periods of time. Examples of server applications are Apache (a web server) and Asterisk (described later in this section).

Interactive voice response systems

Interactive Voice Response (IVR) systems run on server computers. They handle incoming phone calls and provide callers with a range of automated options, allowing them to report specific events or get specific information.

You can use FreePBX, Asterisk or TrixBox to do this. These tools are powerful and have great potential for advocacy, but they are currently very challenging to install and require Linux administration skills.

Interactive voice response works like this: someone calls your number and is greeted by a recorded voice message, for example: "Welcome to the election monitoring action line". The caller is then presented with a range of options: to register as an election monitor, press 1; to make a positive comment on the election, press 2; to report a violation, press 3; to hear a news update on how the elections are going, press 4; to repeat these options, press 5 and so on. The caller either speaks the appropriate number or presses it on their telephone key pad. They are then either taken to a new set of menus or asked to record a message. The whole process is automated

These systems are useful for guiding callers to specific information, such as a news broadcast or update, or allowing them to leave a message. Although IVR systems are more traditionally used in high-volume call centres (typically in telephone banking or customer services), they can also help NGOs to gather and distribute information, via voice, from and to the people they serve.

What are the advantages of using an IVR system?

Once an IVR system has been set up and configured, information is automatically distributed to and collected from incoming callers, requiring little further intervention from the NGO (except for updating any news or information broadcasts and monitoring the system's use and its reliability). IVR systems can therefore be left to run without much further manual intervention.

IVR systems are very useful where some of the people served by an organisation are not literate, because they use voice rather than text. What's more, information can be gathered and distributed in greater volume, more cheaply, and generally faster, using voice than using SMS. Finally, since people are phoning you rather than the other way around, your NGO avoids the costs of making calls or sending texts.

What skills do I need to set up an IVR system?

The person setting up an IVR system for your organisation must have a knowledge of systems, network administration and basic telephony.

When you install an IVR system such as Asterisk it will be bundled with the following applications so a working familiarity with all of these applications is necessary. The knowledge required is for the administration and maintenance of the systems rather than for installing them.

- CentOS Linux operating system
- Asterisk
- Apache web server
- PHP
- MySQL database server
- SendMail server
- IPtables firewall
- WebMin
- phpMyAdmin

Further guidance can be found in 'Building Voice Infrastructure in Developing Regions', a guide which is available online (visit: <http://www.it46.se/voip4d/voip4d.php>). This guide is for technical and non-technical readers. The first part gives you the basic information about telephony via the Internet. For those interested in more technical details, hands-on guidelines and configuration files are included in the second part. The examples provide essential background for building your own low-cost telephony system. The last part demonstrates three realistic scenarios of how Voice Over Internet Protocol can be used in rural communities in developing regions. The scenarios cover how to build a local telephony system and how to connect it to other voice networks.

What IVR tools are available?

TrixBox, Asterisk and FreePBX are three tools with slightly different functions and levels of difficulty:

TrixBox is the easiest to use as it will install Asterisk for you on a server computer. However, be warned that it requires a dedicated server and will wipe any existing data off a computer when it is installed.

FreePBX gives you a more user friendly interface than Asterisk.

Asterisk is very challenging to use but is very configurable.

Asterisk

Set up an office phone system, make free or very cheap phone calls over the internet and create your own Interactive Voice Response systems.

Asterisk is an Open Source/free software system which allows you to set up a telephone private branch exchange (PBX) and to connect to other telephone services including the public telephone network. You can set up features such as voice mail, conference calling, Interactive Voice Response and automatic call forwarding.

Cost: Free

FreePBX

Set up and manage an office phone system - a simpler version of Asterisk

FreePBX is a free software application which has some pre-programmed functions that aren't available in Asterisk. It allows you to create and manage extensions, voicemail, IVR (Interactive Voice Response), and some other features. These functions are accessed via a user-friendly web interface.

Cost: Free

TrixBox

A more user-friendly version of Asterisk which incorporates FreePBX

TrixBox is a telephone system based on Asterisk (see above).

TOOLS THAT REQUIRE AN INTERNET CONNECTION, A MOBILE PHONE AND A CREDIT CARD

Online services for creating mobile websites

Mobile websites are created according to the mobile industry standard (.mobi). This standard means that sites are designed and built in an agreed, uniform manner and are compatible with a wide range of mobile phone handsets. Having a version of your website for mobile phones is a good idea because it means that people without access to computers and people on the move can access your organisation's website.

MobiSiteGalore

MobiSiteGalore is an online service which allows the building of mobile phone internet sites.

Wapple.net

Wapple.net offer an online service which allows the building of mobile phone internet sites. The free version will display Google ads on your site.

Nokia Mobile Internet Toolkit

Nokia Mobile Internet Toolkit enables you to create content such as web-pages and multimedia messages (MMS) which are viewable on a phone. This toolkit will give you a preview on your computer screen of what the site or message looks like on a mobile phone

WEB-BASED SERVICES FOR MOBILE PHONES

If an SMS hub is not feasible for your organisation (perhaps you haven't got a computer or mobile phone, or there is no mobile phone network coverage in your area), SMS aggregators provide a similar service through the internet. SMS aggregators are companies which sell text messages in bulk and deliver your text messages for you. After logging on to their websites you can type in your contact mobile numbers and the message/s you want to send. In addition to generally being cheaper than sending the messages individually or through your own SMS hub, SMS aggregators are able to send larger numbers of messages more quickly, which is useful for organisations with a large target group. These services must be paid for with a credit card.

BulkSMS

BulkSMS is a commercial SMS service which allows you to send SMS messages via their web site or through desktop software. It offers SMS coverage to over 500 networks globally.

Clickatell

Clickatell is a commercial SMS service which allows you to send SMS messages via their web site or through desktop software. It offers coverage for 712 networks in 212 countries for outbound messages and almost 100 countries for outbound and inbound messages (two-way SMS). If you are using FrontlineSMS and you have an Internet connection, you can use your Clickatell account to send and receive messages rather than using a GSM modem or a mobile phone.

There are many other commercial SMS services, so shop around because lower prices might be available.

HOW-TO GUIDES

Here are some detailed guides to help you get started with mobile advocacy:

How to set up an SMS hub

Setting up an SMS hub on your laptop or desktop computer will allow you to send and receive large numbers of SMS messages.

Software you can use

The simplest tool to use is FrontlineSMS (<http://www.frontlinesms.com>) which has been widely used by NGOs.

What hardware you will need

PC hardware

FrontlineSMS will run on any desktop or laptop running Microsoft Windows (98, 2000, XP, XP Pro or Vista), Linux (Ubuntu, Redhat, Mandrake, etc) or Apple Mac (OSX, Tiger or Leopard operating systems). Users on Windows Vista should be aware that they may have trouble getting Vista drivers for their GSM modems. The full installation requires approximately 85Mb of free disk space, and a free USB port (1.1 or 2.0) to connect a GSM device.

Mobile/GSM hardware

Because of the variety of GSM phones available in the marketplace, and differences in how they interact with the FrontlineSMS system (primarily the way each communicates with the computer), not all phones will work with the software. Feel free to try out whichever handset is available to you, but it is highly recommended that you test the system before putting it to use. FrontlineSMS is fully compatible with the Wavecom Fastrack modem (serial version with a USB adapter), and the Falcom SAMBA 75 USB modem. Most standard GSM modems will work, but they should be tested first.

Your GSM device will need to be connected to the laptop or desktop computer using a genuine data cable (some cables are badly made copies, and will not work) or equivalent for your chosen handset. A number of unbranded cables tried during testing were not recognised by the handset or computer. In short, most GSM phones connected to your laptop or computer via a serial or USB cable and which load up via a COM port or a Windows telephony device, should be recognised by the FrontlineSMS system.

What documentation is available

The Online Help Guide can be accessed at: <http://frontlinesms.com/help/help-menu.htm>

How easy is it to do?

FrontlineSMS is relatively easy to install and use if you follow these basic steps:

1. Request a copy of FrontlineSMS from the **Request Download** (<http://frontlinesms.com/download/>) page of the website
2. Follow the instructions you receive via email to download your copy of the software
3. Install the software on your computer
4. Set up and install the drivers for your mobile phone, modem and/or cable, following the relevant user guide
5. With your mobile device attached, start up FrontlineSMS
6. If your phone is fully supported and properly configured, it will appear in the **Phones** (<http://frontlinesms.com/help/phonemanager.htm>) tab
7. If you have any problems, consult the programme's Help menu, or the online **Troubleshooting Guide** (<http://frontlinesms.com/help/troubleshooting.htm>)

How much will it cost?

When you send a message with FrontlineSMS you will pay the standard SMS sending rate for the account you are using.

If you are planning on sending a lot of messages its a good idea to ask your operator if they have a special rate for sending large amounts of messages through a 'Short Message Service Centre (SMSC)':

Other things you should know

The latest version of FrontlineSMS has just been launched, and is undergoing continual improvement and enhancement. Join the online community (<http://ning.frontlinesms.com>) to keep up to date with the latest news.

HOW TO CREATE A MOBILE WEB SITE

A 'mobile web site' is a version of a website which is easily viewable on a mobile phone.

Software you can use

Nokia Mobile Internet Toolkit

To install NMIT, you will need:

- The .zip file containing the software and its installation wizard
- A product serial number that you will use when you run the installation wizard

You can get both free of charge directly from <http://www.forum.nokia.com>. If you are not already a registered member of Forum Nokia, you will need to register (also at no cost) before you can download the packages. Registration involves providing:

- A user name
- A password
- An email address to which the serial number is sent

What hardware you will need

You will need a computer with the following specification;

Operating System/s:

- Microsoft Windows Professional 2000 (Service Pack 3)
- Microsoft Windows XP Professional (SP1a)

Additional software/plugin required:

- Java™ Runtime Environment (JRE) 1.4.1_02 or later.
- Nokia Mobile Browser Simulator 4.0
- Nokia WAP Gateway Simulator 4.0

What documentation is available

Visit: http://www.forum.nokia.com/info/sw.nokia.com/id/d9fb4771-43f0-48ab-a4d5-5bfa1734e8cd/NMIT4.1_User_Guide_v1_0.pdf.html

This document describes what you need to know and do to install the Nokia Toolkit 4.1 with the Nokia Update Manager 2.0.

Nokia Mobile Internet Toolkit (NMIT) is a set of editors for creating various types of mobile Internet content and previewing this content on various supported phone SDKs. Such content types includes:

- Browser content
- MMS messages (Multimedia Messaging Services)
- Push messages

DRM messages (Digital Rights Management) content.
Nokia Update Manager (NUM) runs periodically and displays updates for products your system. These updates are available from <http://www.forum.nokia.com>.

How much will it cost?

The toolkit is free; you will need to register with Forum Nokia to get a serial number.

Mobile website design

Because of the small screen and limited user interaction, designing websites for viewing on a mobile phone presents challenges. The Mobile Web guidelines issued by the W3C offer some best practice statements which cover the following areas;

- Overall Behavior
- Navigation and Links
- Page Layout and Content
- Page Definition
- User Input

To explore in more detail visit: <http://www.w3.org/TR/2006/CR-mobile-bp-20060627/#iddiv1122371184>

HOW TO CREATE A RING TONE

Ring tones can be a great way for your organisation to market itself or promote a cause.

Software you can use

Choose a piece of music or a sound file you wish to use

Create an Audio file using Audacity - available for free from <http://audacity.sourceforge.net>

Export an MP3 file - there are detailed instructions available at: <http://flossmanuals.net/Audacity/ExportingAFile>

Other file formats supported are mp3, mp4, acc, mid, midi, wma, m4a

Browse to http://www.theunlocker.co.uk/ringtone_creator and upload the audio file

The online system will let you edit and export your ringtone to your computer

You can then use a data cable, Infra Red or Bluetooth connection to upload your ringtone to your phone

What hardware you will need

- PC with sound card
- PC that has a data cable, Infra Red or Bluetooth connection
- Mobile phone that can be connected to a PC using a data cable, InfraRed or Bluetooth

What documentation is available

The *Know your mobile* (<http://www.knowyourmobile.com>) website has user guides for most phones which will show you how to customise the ringtone on your particular model of phone.

There is a detailed guide to making ringtones using Audacity which will bypass the need to use the online Ringtone Creator site. This can be found online here: http://www.audacityteam.org/wiki/index.php?title=Making_Ringtones

How easy is it to do?

- Editing files in Audacity is very straightforward
- Using the online Ringtone creator system is very straightforward
- Customising ringtones on your phone depends on what type of phone you have

How much will it cost?

The Ringtone Creator site is free to use

Other things you should know

- You will need to be able to transfer files from your desktop computer or laptop to your mobile phone; so you will need an Infra Red, Bluetooth or data cable connection.
- Check the *Know your mobile* (<http://www.knowyourmobile.com>) website to see what the special requirements for ringtones for your model of phone is.

Distributing your ringtone

Ringtones can be used as a publicity or marketing tool for your campaign - simply make the ringtone available as a download from your site. You should also encourage viral distribution of your ringtone; users can do this for free by using Bluetooth connections to transfer files.

HOW TO USE AND MANAGE BULK SMS SERVICES USING A WEBSITE

There are commercial services available which allow you to send and receive large numbers of SMS messages. This how-to will show you how to use one of the leading commercial services to manage this service.

What software you can use

BulkSMS offers a desktop package called **BulkSMS messenger** that you can download from their website at <http://www.bulksms.com/messenger/>

Alternatively you can use their system online through an easy to use web interface.

Read the FAQs online <http://usa.bulksms.com/w/faq.htm>

What hardware you will need

The BulkSMS service can run from a website so you can use any computer that is connected to the internet.

The BulkSMS text messenger software runs on a PC only.

What documentation is available

Online information is available here: <http://bulksms.vsms.net/w/help.htm>

How easy is it to do?

Both the Web and the desktop applications are very straightforward to use and require little technical expertise.

How much will it cost?

Below are some suggested costs in different regions for SMS charges.

	local operator	bulk 1000 units	bulk 100000 units
South Africa	\$0.05 – \$0.10	\$0.04 – \$0.063	\$0.035 – \$0.06
Kenya	\$0.053 – \$0.075	\$0.044 – \$0.05	\$0.035 – \$0.048
Ghana	\$0.04 – \$0.042	\$0.042 – \$0.095	\$0.033 – \$0.09
India	\$0.013 – \$0.05	\$0.019 – \$0.05	\$0.015 – \$0.048
Philippines	\$0.011 – \$0.023	\$0.043 – \$0.095	\$0.035 – \$0.09

Other things you should know

BulkSMS is only one of many bulk SMS services - other leading suppliers include Clickatell.

Check the **Google Directory** for more suppliers online at: http://www.google.co.uk/alpha/Top/Computers/Mobile_Computing/Wireless_Data/Short_Messaging_Service

MAKING THE MOST OF YOUR CAMERA PHONE

Camera phones can make a great impact to your organisation's advocacy work, whether as part of a People's media programme or to document the everyday work of your organisation. This quick guide will help you make the most of your camera phone.

Choosing a camera phone

Buying a mobile phone with a camera can represent a significant cost for a mobile phone advocacy project so before you go ahead it's worth asking a few questions. Spend some time looking at the features offered to ensure the camera phone has the functions that you need. There are many online databases which will allow you to research the various options available before buying a phone. A good example is: <http://www.mobiledia.com/phones/search/>

- **Number of pixels** A two-megapixel camera will allow you to take an image which will print out a fair to good image quality (150 pixels per inch), for a picture size of 8" by 10". A three or four-megapixel camera on your phone will significantly improve the image quality, allowing you to print a much higher-quality image. Most mobile phone cameras will allow you to take pictures of good enough quality to use in screen format on a blog or a website if you are intending to use small images.
- **Response time** If you are going to be using your phone in situations which require a quick response check that the phone you are buying has a camera that can take pictures instantly and that it has a quick shutter release after you press the button.
- **Type of zoom** Digital zooms aren't particularly useful to have since they can decrease the quality of a picture, but optical zooms can be useful.
- **Communication** There are several ways to send photos to your computer: by Bluetooth, cable or Infrared. Check which of methods the phone supports and whether it is compatible with your computer.
- **Memory** Check how big the internal memory of the phone is and whether it can accommodate a separate memory card. If your camera phone can take 3.2 Mp pictures each picture will require approximately 1 megabyte of memory.

Getting the best performance from your camera phone

- Shoot quickly: some time elapses between the moment that you press the button on your camera and the moment that the shutter actually opens to take the photo. Try and anticipate and shoot early rather than lose the picture.
- Keep the lens clean.

- Don't shoot in brightly lit conditions since most camera phones don't work well in this type of light; instead look for partially cloudy or shady conditions if you are outside.
- Use the flash only when necessary and if your subject is very close.
- Set your camera phone to the highest resolution possible to get the best picture quality.

GETTING MEDIA OFF YOUR PHONE

Once you have captured your pictures, video and sound you need to get them on to your computer in order to later incorporate them into your organisation's campaign communications or your blog post.

There are various ways to get images, sounds and videos from your phone to your computer;

- Bluetooth
- Wifi
- Data cable

Bluetooth is a technology which allows two handsets or a handset and a computer within close proximity of each other to transfer information to each other. Most Bluetooth technology works over a range of approximately 10 metres. Although newer variants can reach further, up to 100 metres, it is likely that you are going to want to use Bluetooth to transfer data off your phone by sitting next to the computer with the phone.

To connect your phone and your computer via Bluetooth you should follow the instructions on your computer about 'pairing' a device via Bluetooth. You have to make sure that both devices have Bluetooth switched on, and follow the instructions. If you are transferring data this way, always remember to switch Bluetooth off when you are finished. If you forget, it can leave an open door for others to install software, malware or files on your device later, which may be a security concern. Some phones also have data cables which allow data to be transferred directly to a computer. Many new high end phones include Wifi connectivity.

You can also download programmes to your computer that will allow you to synchronise, back up and manage the files on your phone from your computer. Or you can use software directly on your phone to do the same tasks; this may be provided by your mobile phone manufacturer, or there are freeware packages available on the internet.

Multimedia messages allow users with Multimedia messaging(MMS)-capable phones to send text, photos, audio and video to one another across a mobile network. Unlike Bluetooth, the

two phones can be far away from each other, even in different countries. Most phones today are MMS-enabled, particularly camera-phones which allow the sending of photographs taken on a mobile phone between two users. Different phones compile MMS messages in different ways, but in essence it is a similar process to email, where pictures, video and sound files can be sent as attachments.

If the receiving phone is unable to receive the MMS for some reason (perhaps it is not MMS-enabled, or it is an older handset), then the user of that phone will receive a standard text message pointing them to a website where they can view the message and attachments online.

MMS messaging can also be used by organisations who wish to send pictures to news sites to publicise events or activities.

While the potential of Multimedia messaging is great, you should bear in mind that the cost of sending and receiving these images varies greatly between mobile phone service providers and countries. It is worth finding out about this before you start using this as a way of exchanging images or video as it may be much cheaper to rely on transfer to a computer rather than sending these data between phones.

USING MOBILES TO UPDATE BLOGS AND WEBSITES

You can use your mobile phone to update your organisation's blog or website.

There is enormous potential in using mobile phones to update blogs and websites, but unfortunately it is still fairly challenging to do. This is likely to become easier in the next few years.

Some proprietary blogging systems such as **Blogger** (<http://www.blogger.com/mobile-start.g>), **Orkut** (<http://en.blog.orkut.com/2008/04/now-available-orkut-on-your-mobile.html>) and **Livejournal** (<http://www.livejournal.com/support/faqbrowse.bml?faqcat=mobile>) will allow you to update your blog via your mobile phone.

This is also true of many of the popular social networking sites such as Facebook, and photos and videos can be posted directly to websites such as Flickr and Youtube. You can install an application called Shozu on your phone which will allow you to transfer images directly from your phone to the various photo-sharing and social networking sites. Shozu is installed directly on your phone and will not work on all mobile phones.

If you have a Wordpress blog you can use the **Wphone** (<http://wordpress.org/extend/plugins/wphone/>) plugin. This is a plug-in which you install on your Wordpress server, which gives you access to a special administration interface designed for your phone which will

allow you to update your blog. Or if you are using the blogging platform Typepad you can use the **Typepad mobile** (<http://www.sixapart.com/typepad/tmdownload.html>) application.

If your website does not use this system you should transfer material to your computer or send the material as an email or MMS from your phone.

- **Drupal Mobile Media Blog** (<http://drupal.org/project/mmb>): allows you to post media via e-mail or mobile phone
- **Drupal SMS Gateway** (<http://drupal.org/project/smsgateway>): SMS Gateway for Drupal (currently supporting Clickatell)

OTHER TOOLS FOR MOBILE PHONES

There are others tools and services that weren't chosen for inclusion in the toolkit but are worth investigating.

Web, email and social networking tools

These tools make it possible to access your email or social networking site on your mobile. You should bear in mind that they require a mobile data connection, which can be expensive.

- **Opera mini** (<http://www.operamini.com>) is a web browser designed specifically to make the most of viewing web pages on your mobile phone
- **Facebook mobile** (<http://www.facebook.com/mobile/?web>)
- **Gmail mobile** (<http://www.google.com/mobile/default/mail/index.html>)
- **Hotmail mobile** (<http://www.msn.co.uk/msnmobile/singlepoint/mobilehotmail>)
- **Yahoo mobile** (<http://mobile.yahoo.com>)
- **Myspace mobile** (<http://mobile.myspace.com>)
- **Google maps** (<http://www.google.com/mobile/default/maps/index.html>) application offering maps, directions and business listings on your phone.

People's media tools and services

- **Gabcast** (<http://gabcast.com>) Gabcast.com is a podcasting and audioblogging platform that provides an easy way to create and distribute audio recordings. Most people will use a touch-tone telephone to make their recordings but Gabcast also provide worldwide access to the service through VOIP. Once you have made a recording and have published it, a newsfeed is immediately and automatically updated to alert subscribers to your channel.

- **Greenpeace UK Moblog** (<http://moblog.co.uk/blogs.php?show=9068>) is a commercial mobile blogging service that has been used successfully by NGOs such as Greenpeace and Amnesty international to bring people up to date on their campaigns and to encourage them to send photos and videos which may be displayed on the moblog.
- **Blasterisk** (<http://www.blagblagblag.org/BLASTERISK/index.shtml>): BLASTERISK is a free telephone service for Free Software users, developers, and independent media activists.
- **Txtmob** (<http://www.txtmob.com>): TXTmob lets you quickly and easily share text messages. You can sign up to send and receive messages from various groups, which are organized around a range of different topics.
- The **Wphone** plug-in (<http://wordpress.org/extend/plugins/wphone>) allows you to update your Wordpress blog from your mobile phone. It's a plug-in which is installed on your Wordpress server which gives you access to a special administration interface designed for your phone which will allow you to update your blog.
- The **Typepad mobile** application (<http://www.sixapart.com/typepad/tmdownload.html>) allows you to update your Typepad blog from your phone.
- **Drupal Mobile Media Blog** (<http://drupal.org/project/mmb>) allows you to post media via e-mail or mobile phone 'disaster and quick response' tools
- **DEWN** (<http://www.dialog.lk/en/corporate/cr/ourapproach/innovationinclusion/dewn.html>): Disaster Early Warning Network for Sri Lanka.
- **Sahana** (<http://sahana.lk>): FOSS Disaster Management system, that provides solutions to large-scale humanitarian problems in the relief phase of a disaster. It includes an SMS messaging module.
- **Voxiva** (<http://www.voxiva.com/solutions.asp>): mobile solutions primarily used in the field of health care (for example for reporting outbreaks of Avian Flu).

Security tools

- **Crypto SMS** (<http://cryptosms.org>): CryptoSMS is an open-source tool for SMS encryption which is installed on your phone. Unfortunately this software seems only to work on new 3G phones and is challenging to use so you should not install it unless you have very serious security concerns.
- **SMS007** (<http://www.sms007.cz>) is a commercial SMS encryption tool which is installed on your phone.

IVR and phone systems

- *PBX in a Flash* (<http://pbxinaflash.net>) is similar to *TrixBox* (<http://www.trixbox.org>) in that it provides a convenient installer for Asterisk but has fewer features than Trixbox.

Other tools and projects

- *Kannel* (<http://www.kannel.org>): An Open Source project to make a WAP and SMS gateway.
- *OpenMoko* (<http://www.openmoko.org>): An Open Source project with the goal of creating the world's first completely Open Source mobile phone.



Budgeting

INTRODUCTION

When your organisation decides to implement a project using mobile phones it is important to compare the cost of the project with the potential benefits it might bring.

If you prepare a budget and analyse how investment in a mobile advocacy project compares to investing in alternative methods, it is easier to make changes to existing budget allocations or to raise new funds in order to set up the programme or to keep up with the costs of running it. You may need to calculate pricing models if the project needs to sustain itself or generate revenues for the organisation.

Some reasons for investing in using mobile phones to support advocacy:

- The increasing number of phones in use and greater reach of mobile technology has made it easier to reach bigger audiences more quickly and inexpensively than before.
- Mobile phone networks cover many rural communities, and the use of mobile technology as an advocacy medium makes it possible to reach people in areas where traditional advocacy methods such as printed media weren't cost effective.

COSTS

Understanding the goals of the project

Different mobile advocacy scenarios have different budgetary needs. You should ask yourself some basic questions about the budget, including:

- How long will this project last?
- How many people is this project targeting?
- Will this project be carried out mostly by internal or by external staff?

You should consider whether it would be possible to replicate or scale up the project, especially if the initial set-up costs are very high or the project is expected to become financially self-sustaining.

For example it might be much cheaper to implement a text messaging project for your organisation after you have made the initial investment in setting up an SMS hub

Expenses that need to be taken into account are separated into **set-up** costs, **technology** costs and **running and maintenance** costs.

Set-up costs

There are several phases in setting up a mobile advocacy project. They might include:

- Planning (including budgeting)
- Market research or a feasibility study
- Project coordination (such as team management, external contracting)
- Preparing the technical platform (setting up computers, servers etc.)
- Content or message development (for the mobile messages, marketing, and a possible web-site if statistics or other information will be published during the project)
- Collecting phone numbers for a database.

All these are **human resources** costs since staff members will be required to spend time on these preparations. Alternatively you may decide to hire an external consultant, who can take responsibility for this work and help make decisions.

To be able to estimate these costs, it will be necessary to have a detailed project plan and a schedule, including: the estimated duration of each phase, information on who plays which role and what the responsibilities of each person are, and quotations from possible service providers.

Whatever you are trying to do and regardless of whether this preparation is handled by your staff or by an external consultant, software, hardware and technology services may be needed before or during the campaign, in order to handle:

- Content development (such as marketing materials or a web-site)
- Sending and receiving messages
- Campaign management (message content, timing, mobile phone numbers, etc.)
- Recording and sending content such as text, photos, audio or videos
- Processing, protecting or managing content that is being collected as part of the campaign
- Integrating information produced by the project with existing information systems such as a membership database

Technology costs

Below is a list of items relating to technology that you may need to include in your budget, depending on your campaign scenario and the level of external services used. Some examples of things to consider are:

- Development, localisation (alterations to a platform to make it relevant to local conditions such as language) or configuration of a technology platform (either out-sourced or implemented internally).

Licensing or set-up fees for a commercial messaging application provided as a service.

- Computer(s) and software to develop content, manage the campaign application, process and store campaign information, plus software to protect computers and phones from viruses and other threats.
- GSM modem or mobile phone(s) to send and receive messages from the messaging application (additional cables or other equipment such as a Bluetooth dongle that will connect the equipment to a computer may also be needed).
- Phone(s) and other devices (such as digital cameras) to capture information and to test that the system works.
- Set-up fees or pre-paid SIM card fees, in order to access the services of one or of several mobile network operators.
- Short codes to be used in the campaign.
- Server(s) to run different system components or to back up information.
- Internet connectivity set-up fees (either traditional fixed-line service such as dial-up or ADSL, or mobile service such as GPRS or 3G).
- Surge protectors or a UPS back-up battery; these protect against power supply problems.
- Web-site hosting set-up fees.

In areas where technology purchases would make you vulnerable to crime, you may need to adopt additional security measures.

After the technical platform has been set up and properly tested, staff training might be needed, which will mean paying staff wages for extra time and may require the contracting of an external trainer.

You should also budget for some administrative costs, especially if frequent travel and phone use are required when negotiating with service providers.

Running and maintenance costs

In order to prepare an accurate budget, it is essential to estimate the type and amount of information that will be sent via the mobile network and to understand clearly the pricing principles of the mobile network operator or the messaging application provider.

A common pricing model for application providers is to charge a unit fee on top of the monthly or annual subscription fees. This means that you pay for every piece of information sent, and sometimes also to receive information. For example, for each text message (SMS) sent a small fee is charged, and if you send more text messages, the cost will increase. Generally, different types of data have different prices. Data categories are: SMS units, MMS (multimedia) units, ringtone units or

general data units (the size of your messages, videos or voice recordings will determine how much it costs to send them, but some kinds of data cost more than others). The units are often measured in kilobytes or megabytes.

As seen with the set-up phase, human resources costs can become one of the biggest expenses in this phase of a mobile advocacy campaign.

In addition to these project and campaign management tasks, you may need to handle media enquiries and other types of communication, to monitor your project and evaluate its progress against the goals that you have set, and perform other tasks demanding attention and time from your staff.

You will also need to take into account the additional financial management your campaign will require, because you'll have to monitor payments to your external service providers and try to avoid paying high unit prices unnecessarily.

How much it costs to run and maintain the technology will depend on which technology platform you choose for the campaign. Commercial services such as Internet connection subscriptions or additional insurance fees will require ongoing payments, but these are fairly easy to estimate.

Unplanned contingency expenses should also be allowed for, such as computer part repairs, replacement of damaged SIM cards, or insurance costs if equipment is stolen. If part of the technology platform is being developed specifically for the campaign you may end up having to pay to develop additional functions.

Costs of using commercial SMS services

It is always recommended that you compare the prices offered by different providers. Local providers tend to have cheaper rates than international companies. Costing should include the testing of the SMS application, making sure that guidelines and manuals are provided, and checking the terms and conditions of the contract (note particularly any promises made by the service provider about the quality of services offered).

Remember that some service providers have special cheaper fees for NGOs. For example, *BulkSMS* (<http://www.Bulksms.com>) provides text messages to South African non-profit organisations at the lower cost of \$0.03 per message, regardless of the number of units purchased.

Many of the online bulk SMS providers only charge per unit for text messages sent via the tools that they themselves provide (for example, a web-tool or desktop application). However, sometimes, especially

when you are using an application that allows you to both send and receive text messages, the pricing may seem confusing, especially if the total cost is a combination of set-up charge, subscription and unit fees. A more detailed article on pricing, which explains commonly used unit pricing options, may be found at: http://www.developershome.com/sms/howToChooseSMSSGateway.asp#1.2.1.%20How%20much%20does%20it%20cost%20to%20send%201%20SMS%20message_|outline

The costs of success

In many campaigns the organisation in charge cannot predict or control exactly how many text messages they may end up sending and receiving. Therefore the full cost of the campaign may vary. It is important to think about what might happen if your campaign is very successful.

As the example below shows, unforeseen success may increase your costs way above the limits of your budget unless you try and provide for these eventualities. You could decide to charge a fee for people to send you messages (although this might affect the success of the campaign), or you could use a technology platform that doesn't charge you unit fees to receive messages.

For instance, say an organisation is planning to ask their members to sign a petition by responding to an SMS message. The petition request would be sent to all 10,000 members whose mobile phone numbers are saved into the membership database. Based on previous campaigns, the campaign manager estimates that every fourth member will respond to an initial petition request followed up by a reminder a few days later.

Because the organisation is using a bulk SMS service, the service provider will charge a fee for each message sent or received (the price list indicates that each message sent to 10,000 numbers will cost \$ 0.05 and each message received will cost \$0.10). Therefore, in case the campaign turns out to be highly popular, either among the members, resulting in a 100% response rate, or even beyond the membership (people may forward the message to their friends or colleagues), the campaign manager should prepare additional budget estimates for these scenarios.

Number of people targeted: 10,000
Messages sent to each person: 2
Cost of sending each message: \$ 0.05
Estimated response rate: 25% of the 10,000 people contacted
Messages received from each person: 1
Cost per message received: \$ 0.10
Total Unit costs at estimated response rate: $10,000 * 2 * \$ 0.05 +$

$25\% * 10,000 * 1 * \$ 0.10 = \$ 1250.00$

Response rate if every member responds: 100%

Total Unit costs if every member responds: $10,000 * 2 * \$ 0.05 + 100\% * 10,000 * 1 * \$ 0.10 = \$ 2000.00$

Estimated maximum response rate: 500% (500,000 people responding to the petition)

Total Unit costs if the petition becomes a national success: $10,000 * 2 * \$ 0.05 + 500\% * 10,000 * 1 * \$ 0.10 = \$ 50,000.00$

Because the petition is organised to support an important cause which might get attention from beyond the membership base, you may run a financial risk resulting in unacceptable costs. If you cannot pay for enough units, some of the messages will not be received, which means your campaign will be less successful than it might have been.

COMMON CHALLENGES

Again, the chosen campaign scenario, complexity and size of the project will determine how challenging the budgeting phase will be. However, there are some typical challenges that most organisations will encounter, especially when planning their first mobile campaign. This section briefly introduces these challenges and provides hints on how to avoid them.

How to plan the most cost-efficient approach?

Two major budget decisions an organisation will need to make for each project are:

- Should external help such as a technology vendor be used?
- What type of a technology platform should be used (commercial vs. Open Source applications, and locally installed applications vs. hiring an application as a service)?

It is possible to run a mobile advocacy campaign without external help, even if you have no previous experience. Online bulk SMS services are often easy to use - see the 'how to' on 'How to use and manage bulk SMS services using a website'.

However, if you are using any other systems it is often cheaper to contract a service provider to provide advice and technical capacity and allow staff to focus on core work such as general campaign management. If mobile projects are going to become an integral part of your organisation's strategy, running the campaigns yourselves would reduce costs in the long term by building internal capacity. A good way to start is initially to ask a vendor to help with the first project in order to provide training and transfer the necessary skills, so that external services can be kept to a minimum in the future.

Sustainability

Organisations often use new technologies to reduce the amount of time spent on specific tasks. In its simplest form, the use of mobile phones can reduce the communication and travel costs of an advocacy organisation.

In order to justify the costs of a mobile advocacy project there must be added value for the user, for example easier and faster access to relevant advocacy information.

If mobile campaign costs are covered from existing core funding or re-allocated from other costs, the most important task is to prepare a budget that does not exceed the funds available.

Certain mobile advocacy campaigns can be self-sustaining, and can even be used for fundraising.

Using short codes for fundraising

Most of the service providers offer short codes (special easy-to-remember phone numbers for the public to call or text in to). People who send you messages will be charged for every SMS they send to the short code. This service is based on a revenue-sharing model, where the service provider will charge you a percentage of all the revenue. Sometimes the provider is willing to waive their share of the revenue for a good cause. Marketing of such a campaign is very important and organisations have been known to approach the organisers of big events like outdoor concerts, or popular radio shows or newspapers for free promotional coverage. One disadvantage is that the service providers typically claim a much higher share of the income from these campaigns, compared to alternative donation models.

Be wary of high fees when fundraising via SMS short codes.

Some service providers may advertise that they will pass all revenues on to the organisation after the mobile operator's share has been deducted, and that they will only charge a fixed transaction fee per donation received. Others will not charge any transaction fees and will give a certain percentage of the total monthly revenues to the campaigner. The trend is for organisations to receive a lower percentage of small donations than of larger donations. For example, in South Africa, an organisation may still be asked to pay a small fee per message if the people phoning in are only being charged \$0.15 per sent message. Therefore when respondents pay only a small amount, you may cover just the costs of a campaign, without a financial gain. South African organisations can lose between 30% and 70% of the funds donated by SMS in revenue-sharing and transaction fees. So if a person donates \$5.00 via SMS, the organisation would only gain close to \$3.50 from the transaction.

It should also be noted that the provider may set a monthly minimum amount that the campaign must reach or risk losing even the small amount of funds that have been donated via SMS.

Money-saving ideas

Some service and network providers may be willing to promote campaigns if the objective is aligned with the goals of an existing social responsibility programme.

If the campaign requires several regular purchases of bulk message packages, it may be cheaper to buy more messages less frequently.

If normal unit rates apply, weekend and evening campaigns are cheaper (if the network provider promotes off-peak rates). Also, purchasing SIM cards for each different network operator and then grouping recipients and choosing a SIM card according to which network is cheapest for each group may save money.

BUDGETING CHECKLIST

Below is a checklist of all the possible costs that running a project involving mobile phones might entail.

Set-up Costs

Human resources costs (salaries, etc..)

- o Planning
- o Market research
- o Project coordination
- o Technology preparation
- o Content development
- o Other campaign preparation

Contracted service provider or consultant fees

Technology

Hardware

- o Phones and SIM (or PDAs)
- o Personal computers
- o Servers
- o Modems (Internet, phone network such as GSM, 3G, etc..)
- o Other equipment (GIS, media recorders, UPS, cables, etc..)

Software or online-services (either license or subscription fees)

- o Operating systems
- o Publishing
- o Messaging (applications, short codes, etc..)
- o Project and campaign management
- o Office applications (spreadsheets, image editing, etc..)
- o Information safety (back-up tool, virus scanner, firewall etc..)
- o Application integration
- o Web-site hosting

Communications

- o Mobile network connectivity (voice, data)
- o Internet connectivity

Other

- o Additional security measures
- o Training (course fees, etc..)
- o Administrative costs

Running and Maintenance Costs

Human resources costs (salaries, etc..)

- o Project coordination
- o Campaign implementation
- o Content development
- o Other campaign tasks
- o Financial and HR management
- o Technology and information management
- o Contracted service provider or consultant fees

Marketing costs

- o Content development and design
- o Materials
- o Media Advertising

Technology

- o Hardware
- o Replacement and maintenance of purchased equipment
- o Communications

Software or online-service

- o Technology support

Other

- o Additional security measures
- o Insurance fees
- o Training (course fees, etc..)
- o Administrative costs

OTHER RESOURCES YOU MAY NEED

If you're looking to use mobiles in your advocacy and activism work you will need to assess how best to use the resources of your organisation.

- o If you are planning to work in remote locations with limited infrastructure, or none, you should consider how you are going to manage your power supplies - see information below on this.
- o Even organisations with very limited resources can use mobile phones for simple text and voice campaigns, for example by sending a message containing information about a law or about a meeting, which can then be spread by the recipients, who forward the messages to friends, family members and people who support your cause. It costs an organisation nothing to set up a system of missed calls to use as free signals among staff: for example, you can arrange that when someone makes a missed call at a certain time or makes such a call a certain number of times, this serves as a signal to attend a meeting.
- o More complicated uses of mobile phones, such as setting up a system for sending and receiving large numbers of text messages, may require an investment in hardware such as a computer, cables and GSM modems or other specialised equipment. You may also need a consistent electricity supply if your service is going to be available all the time
- o These systems will require ongoing technical support, so before investing in this equipment you should ensure that your organisation has these resources available.
- o If you want to use a commercial online system for sending text messages you should bear in mind that you will need a credit card to sign up and pay for it.
- o If you want to use a mobile phone camera to take photos for your organisation's website or reports, or as documentation, you'll have to invest in a fairly good-quality camera phone.
- o Many 'clones' of high end phones are now available – these are cheap copies of phones that may look very similar to top brands. This is a very fast-developing market so it is hard to get proper reviews or specifications of these phones. Be warned that clones may not deliver the functions you are expecting.
- o If you want to use your mobile phone as a means of accessing the internet on the move you will need to check whether the GPRS

mobile data service that you need to do this is available in your area. The same applies to users with WIFI (wireless communication) enabled on their phones - they can only use this function where WIFI coverage exists.

Power supplies

If you're planning to work in remote locations with limited infrastructure, or none, you should consider how you are going to manage your power supplies.

Solar chargers can be a great way of ensuring that you have continuous power available.

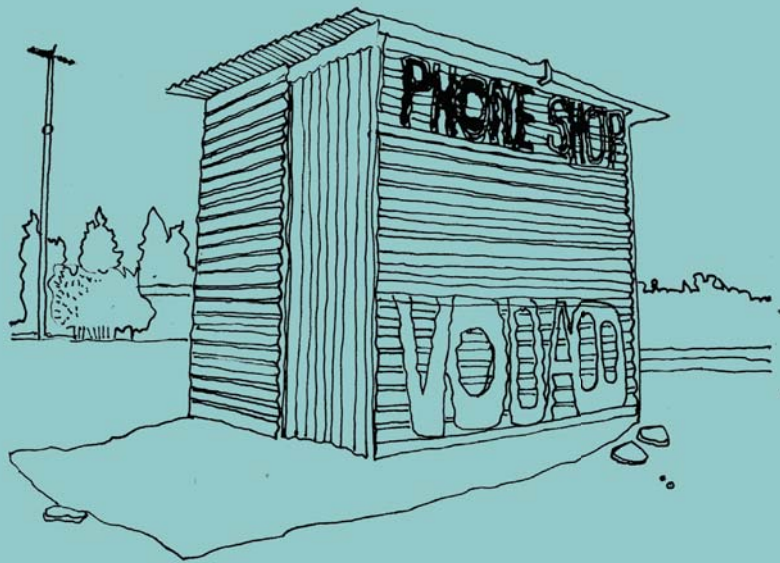
Before you invest in a charger there are some questions worth asking:

- Can the charger store power so that I can charge my phone/MP3 player later?
- What is the charge time to usage ratio for a mobile phone?
- Can I also use an AC or car adaptor with the charger?
- Is there a realistic limit to how many charges the device can handle in its lifetime? This is especially important for people who want to supplement their income by offering a phone-charging facility.

Some solar chargers which have been recommended;

- <http://www.solio.com/charger/explore-solio/what-is-solio.html>
- <http://www.g24i.co.uk/pages,products,40.html>
- <http://www.solarstyle.com/>
- <http://www.voltaicsystems.com/>
- <http://www.powertraveller.com/iwantsome/primatepower/power-monkey-explorer/>

Appendices Links



Appendix 1: Links

This section contains links to other resources, tools, services and documentation which are not discussed in detail in the toolkit.

MOBILE ADVOCACY COMMUNITIES

- **Mobile active** (<http://mobileactive.org>). A resource for activists using mobile technology worldwide.
- **ShareIdeas** (<http://shareideas.org>). ShareIdeas.org is an online community and a wiki for sharing ideas on how to use mobile communications for social and environmental benefits. ShareIdeas.org was created with support from Nokia and Vodafone, but belongs to the growing global network of individuals and organizations that use this virtual gathering place to communicate - and collaborate.
- **Eprom** (<http://web.mit.edu/eprom/index.html>): Eprom is a part of the Program for Developmental Entrepreneurship within the MIT Design Laboratory, aiming to foster mobile phone-related research and entrepreneurship with a focus on the Africa region.

RESOURCE SITES

- **Mobile Africa** (<http://www.mobileafrica.net>): A web portal very popular amongst mobile users in Africa, calling itself “the gateway to Africa’s mobile communication technology, containing extensive invaluable tools for everyday use like SMS and Ringtones, plus a Glossary of terms used in the mobile communications industry”.
- **Mobile Active Strategy Guides** (<http://www.mobileactive.org/guides>): A series of guides directed at NGOs, listing strategies, case studies, and lessons learned to encourage the adoption of mobile phones.
- **Kiwanja** (http://kiwanja.net/database/kiwanja_search.php). Mobile applications database containing details of projects from around the world which make social and environmental use of mobile technology in fields such as human health, economic empowerment, conservation, education, human rights and poverty alleviation. A resource collected by Ken Banks, creator of Frontline SMS, who is one of the mobile advocacy toolkit authors.
- **Latest ringtone news** (<http://www.textually.org/ringtonia>).
- **160 Characters** (<http://www.160characters.org/index.php>) news site on SMS and mobile messaging.
- **Mobile Society** (<http://www.mobilesociety.net>): This website provides information on research related to the social consequences of

the mobile phones. Their mission is to include all publicly available information on studies about the interaction between mobile phones and contemporary society.

SERVICES AND APPLICATIONS

Commercial services

These are companies that provide services such as bulk SMS messaging and short codes. Inclusion in this list should not be seen as an endorsement of the products or companies detailed.

- **KaPow** (<http://www.kapow.co.uk>)
- **mBlox** (<http://www.mblox.com>)
- **MPP Global Solutions** (<http://www.mppglobal.com>)
- **MX Telecom** (<http://www.mxtelecom.com>)
- **NetSize** (<http://www.netsize.com>)
- **SpiderSMS** (<http://www.spidersms.com>)
- **TXT4** (<http://www.txt4.com>): high quality marketing information & integration with CRM systems make these the supplier of choice for large NGOs such as Oxfam & Amnesty

Messaging systems used in NGO contexts

These are some messaging systems that have been used in interesting ways in the not-for-profit environment.

- **Kazi560** (<http://www.kazi560.co.ke>): Kenyan Job site with SMS alerts (established by OneWorld's *Mobile4Good* for more info visit: <http://uk.oneworld.net/section/mobile>)
- **Rights Group** (<http://www.rights-group.com>): US Based Mobile Services & Tools for Cause-Related organisations
- **SafetyText** (<http://www.safetytext.co.uk/HowToST.shtml>): A text messaging system which allows users to send a text message with details about their surroundings. The message is delivered if the person isn't safe and therefore doesn't cancel it. The message is sent to a previously chosen contact, at a pre-defined time. SafetyText is managed by the **Lucie Blackman Trust** (<http://www.lucieblackmantrust.org>).
- **SW Radio Africa SMS Campaign** (<http://www.sokwanele.com/thiszimbabwe/archives/478>): When Mugabe started confiscating radios in an effort to clamp down even further on access to information, **SW Radio Africa** (<http://www.swradioafrica.com>) launched a program through which people could receive headlines by text message.
- **Greenpeace Japan GMO Campaign** (<http://www.shakethepillars.com/?p=50>): Greenpeace Japan developed a GMO-free shopping

guide browsable on mobile web, which creates the opportunity for a shopper to check food products on the fly, while walking up and down the grocery store aisles. They can also read background information about the source company that produces that item and in particular, their customer feedback telephone number, so that companies can be asked questions directly from the public.

- **SMS Communities** ([http://www.t4cd.org/Projects/Current Projects/Pages/SMSCommunities.aspx](http://www.t4cd.org/Projects/Current%20Projects/Pages/SMSCommunities.aspx)): Used by Wildlife conservation teams
- **One SMS to Save One Life in Darfur** (<http://www.todayzaman.com/tz-web/detaylar.do?load=detay&link=108458>): Turkish NGO Kimse Yok Mu asks people to send an SMS message to a specific number, and part of the costs will be a donation for the Darfur food program.
- **Manobi** (<http://www.manobi.sn/sites/sn/>): A Senegalese company operating online systems for businesses in the developing world. It launched the trading platform for farmers and fishermen in the west African nation, signing up 40,000 customers there. Teaming up with cell phone manufacturers, farmers can access the information on a web-based trading platform via Internet-enabled phones, or can request prices and make trades via text message.

Voice applications

Some telephony and VOIP applications.

- **Grand Central** (<http://grandcentral.com>): Hosted service providing a multitude of Feature options for your telephony
- **Celliax** (<http://www.celliax.org>): A project which uses *Asterisk* (<http://asterisk.org>) to manage cell phones & *Skype* (<http://skype.com>) calls
- **Gizmo Project** (<http://gizmoproject.com>): SIP service with a client for a Java Mobile (especially useful with WiFi)
- **TruPhone** (<http://truphone.com>): SIP service with a client for a Java Mobile (especially useful with WiFi)

Ringtones

Ring Tones and Mobile Phone Downloads are Generating Income for Local Musicians in Africa:

In order to fight music piracy, African musicians made a partnership with mobile providers. These, by selling ringtones and songs on their networks, agreed to give a percentage of the income to the musicians. Read the NowPublic article at <http://www.nowpublic.com/node/227954>

FURTHER READING

The political context of mobile phone use

Draft paper on mobile phones and activism: Ethan Zuckermann's paper on the role mobile phones and messaging play in the activities of grass-roots groups in developing countries. Read Ethan's paper here: <http://www.ethanzuckerman.com/blog/?p=1377>

Some stories from around the world about the regulatory and political environment of mobile phone use;

- **Links from Textually.org on SMS and politics** (available here: http://www.textually.org/textually/archives/cat_sms_and_politics.htm)
- **Ethiopia Restores SMS.** Banned since the contested elections in 2005, text messaging has at last been turned back on in Ethiopia in time for Ethiopia's new millennium. The Ethiopian Telecommunication Corporation, the sole telecommunications service provider in Ethiopia, re-started SMS on 14th September 2008. For more detail visit: <http://www.160characters.org/news.php?action=view&nid=2374>
- **Venezuela Proposes to Hold Operators Responsible for SMS Content.** Venezuela's telecoms regulator Conatel launched this week a public consultation on a reform bill that proposes to hold mobile operators accountable for the content sent in text messages via their networks, the watchdog said in a statement. Read the Cellular-News article here: <http://www.cellular-news.com/story/28049.php>
- **In Malaysia, those spreading rumours via SMS on racial clashes can be detained under the Internal Security Act.** KUALA LUMPUR: Those spreading rumours via SMS on racial clashes can be detained under the Internal Security Act. Inspector-General of Police Tan Sri Musa Hassan, who issued the warning, said police were aware of unscrupulous persons spreading rumours via SMS to incite racial clashes. Read The Star's news report in full here: <http://thestar.com.my/news/story.asp?file=/2007/12/15/nation/20071215164847&sec=nation>
- **Togo High Court rules against SMS** – to read more visit: <http://www.pambazuka.org/en/category/internet/43745> The High authority of audio-visual and communication (HAAC) of Togo criticized the use of SMS in Togo's election campaign. In a watershed decision the High Court on Tuesday denounced the publication of short messages by a member of the RPT which is the ruling party in Togo, which sent text messages to potential voters.

Appendix 2: About this toolkit

This toolkit was created by the Tactical Technology Collective (<http://www.tacticaltech.org>). TTC is an international NGO helping human rights advocates use information, communications and digital technologies to maximise the impact of their advocacy work. We provide advocates with guides, tools, training and consultancy to help them develop the skills and tactics they need to increase the impact of their campaigning. The toolkit was created in partnership with Fahamu (<http://www.fahamu.org>). Fahamu has a vision of a world where people organise to emancipate themselves from all forms of oppression, recognise their social responsibilities, respect each other's differences, and realise their full potential.

The toolkit content was inspired by a working meeting in Nairobi, which brought together activists and technologists from around the world to outline the scope, contents and purpose of the toolkit. The tools that we recommend in the kit were extensively tested by four African advocacy organisations.

We would like to thank the following funders, contributors and organisations who helped out with testing for their contributions to this toolkit.



The development of the toolkit is supported by Hivos (<http://www.hivos.org>) and the Open Society Institute (<http://www.opensocietyinstitute.com>).

Hivos is a Dutch non-governmental organisation inspired by humanist values. Together with local organisations in developing countries, Hivos seeks to contribute to a free, fair and sustainable world in which citizens - women and men - have equal access to the resources and opportunities for their development; and to help create societies in which people can actively and equally participate in the decision-making processes that determine their lives, their society's shape and their futures.

CONTRIBUTORS

Ken Banks

Ken Banks, founder of kiwanja.net, devotes himself to the application of mobile technology for positive social and environmental change in the developing world, and has spent the last 15 years working on projects in Africa. Recently, his research resulted in the development of FrontlineSMS, a field communication system designed to empower grassroots non-profit organisations. Ken graduated from Sussex University with honours in Social Anthropology with Development Studies and currently divides his time between Cambridge (UK) and Stanford University in California on a MacArthur Foundation-funded Fellowship. Ken was awarded a Reuters Digital Vision Fellowship in 2006, and named a Pop!Tech Social Innovation Fellow in 2008.

Further details of Ken's wider work are available on his website at www.kiwanja.net

Evan Henshaw-Plath

<http://www.protest.net>

Evan (Rabble) Henshaw-Plath is the co-author of the book *Testing and Debugging Ruby on Rails* and the *Asterisk Cookbook* from O'Reilly, which is soon to be published. He was the lead developer and architect of the podcasting site Odeo.com, one of the first high profile rails sites to launch. Evan has been active in participatory media activism projects including indymedia.org and protest.net.

Tad Hirsch

<http://www.txtmob.com>

Tad Hirsch is a researcher and PhD candidate in the Smart Cities Group at MIT's Media Lab, where his work focuses on the intersections between art, activism, and technology. He has worked with Intel's People and Practices Research Group, Motorola's Advanced Concepts Group and the Interaction Design Studio at Carnegie Mellon University, and has several years' experience in the nonprofit sector. Tad is also a frequent collaborator with the Institute for Applied Autonomy, an award-winning arts collective that exhibits throughout the United States and Europe.

Dorothy Okello

<http://www.wougnnet.org>

Dorothy Okello is the coordinator of Women of Uganda Network (WOUGNET). She has worked to get more women and rural communities engaged in the information society for development via gender and ICT policy advocacy and via program implementation and monitoring and evaluation. She has also been a lecturer with the Department of Electrical Engineering, Faculty of Technology, Makerere University, Uganda. She has been teaching, researching, and conducting projects in the ICT sector at national, regional and international levels for over a decade.

Trixie Concepcion

<http://txtpower.org>

Trixie Concepcion of TXTPower, the group that popularized the Hello Garci protest ringtones in the Philippines!

Fran Boon

<http://www.oxfam.org.uk>

Fran Boon has worked on IT solutions for the developing world for 11 years. Fran is currently the Deputy International Support Manager at Oxfam GB, where he coordinates IT support for the 150 field offices. In his spare time he works on OpenSource projects, such as Sahana.

Geoffrey Muthondu

Geoffrey is a Nairobi - based programmer working with Datadyne.org, a non-profit consultancy creating groundbreaking mobile data products to serve public health and international development.

Christiana Iyoha

<http://poldec.org>

Christiana Charles-Iyoha is a development communications practitioner involved in policy and development analysis with a bias to gender influence, coherence and integration in development. Christiana has a keen interest in and a burning passion for gendered development policy and development programming. An active participant in the Nigerian and global social development discourse, Christiana has extensive experience in germane social development issues from the National Foundation on Vesico Vagina Fistulae, Post Abortion Care Network, (Nigeria), and Development Information Network. She is the Executive Director of the Centre for Policy and Development, Lagos, Nigeria and

the Protem Coordinator of the African Women ICT4D Network.

Rick Bahague

<http://www.cp-union.org/cms>

Rick leads the Computer Professional's Union (CPU)

Kevin Nnadi

Nnadi Kevin is an experienced economist and community mobiliser working with women and In-and-Out of school youth. Kevin has worked with UNICEF as a master trainer in the UNICEF/National Youth Service Corps (NYSC) Reproductive Health and HIV/AIDS prevention project D-field. He has keen interest in mainstreaming ICT in the Rural Development work.

Toni Eliasz

<http://www.ungana-afrika.org>

Toni Eliasz gained a reputation as a mission-driven social entrepreneur with the aim of understanding the opportunities and risks of future technologies (especially information and communication Technologies/ICTs) and using this knowledge to contribute towards a sustainable world and society. One of the key figures of a Global eRiding Network, a world-wide movement of non-profit technology consultants. A rising young visionary, advocate, and a speaker on international digital divide issues.

Contributing organisations

We would like to thank Sally-Jean Shackleton from Women'sNet for her facilitation of the meeting in Nairobi which led to the creation of this toolkit. Women'sNet is a feminist organisation that works to advance gender equality and justice in South Africa through the use of Information and Communication Technologies (ICTs).

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(<http://www.wougnet.org>)

