

101 Seminar Series: Community interaction, Data Gathering and information management using SMS



FRONTLINE SMS

"Regardless of social class, almost everyone [in Africa] has a mobile phone, or two or three. Even in remote villages, mobile phones have replaced the bicycle or radio as prized assets."

Elsie Kanza, The World Economic Forum

SMS in Humanitarian Responses: Uses, Limitations and Resources for Practitioners

About the 101 Seminar Series:

The purpose of the '101 Seminar Series' is to build the capacity of Network members by improving information sharing among members and the wider humanitarian community. The seminars utilise the expertise and experience of member organisations who are asked to share their expertise with other members through face-to-face, practical seminars. In May 2013 the CDAC Network hosted the first in the 101 Seminar, which dealt with Humanitarian Financing. This briefing covers the second in the 101 Series, on the subject of Using SMS in a Humanitarian Context. For more information, please visit our [website](#).

By the end of 2013 the International Telecommunication Union (ITU) estimates that 96% of the world's population will either own a mobile phone or have access to one. In comparison, internet currently reaches only 39% of the world's population. Due to this spread, short message service (SMS) communication has the potential to reach a high proportion of the global population, even in crisis-affected countries.

This briefing explains how humanitarian practitioners can use free, open source software called FrontlineSMS, developed by the Social Impact Lab, to collect and manage SMS communication.

Why SMS?

Mobile phones are the most rapidly adopted [piece of technology](#) in human history. They are increasingly ubiquitous in developing countries, which now account for four in every five connections worldwide according to GSM Association [figures](#) (2012). This means most people in the developing world have access to a phone, even in remote rural areas. For the NGO community this creates an unprecedented opportunity to establish two-way communication with crisis-affected communities. Although smartphones today have many advanced features, every mobile phone has at least a calling and SMS function. As result, SMS is a cheap and effective way to communicate with mobile phone users and those close to them. Even though an SMS is limited to 160 characters, this is enough to provide, for example, early warnings about imminent disasters or to inform crisis-affected people of the nearest helpline. It is also an accessible way for communities to interact with agencies, and for organisations to manage staff and volunteers.

What is FrontlineSMS?

FrontlineSMS is an award-winning, free, open-source software that helps organisations all over the world to overcome communication barriers. FrontlineSMS enables users to send, receive and manage SMS over a mobile network. Users pay only the standard text messaging charges through their regular mobile provider. What is communicated is up to the user, making Frontline SMS useful in many different contexts.

FrontlineSMS software is accessible, intuitive and powerful; letting you use SMS – the world's most widespread digital platform – to manage people, deliver services, and share

What can I use it for?

SMS communication is used for many reasons by humanitarian and development organisations. Here are a few examples of how SMS is helping the lives of vulnerable communities:

- Farmers receive details of market prices and demand for their products before travelling to market.
- Health NGOs send dietary advice and information to people with eating disorders.
- Water sanitation advice and community training updates are sent to municipal counsellors.
- Patients receive reminders to take their medicine, saving time and money travelling to clinics.
- Security and emergency alerts are sent to staff and fieldworkers in high-risk situations.
- Agencies inform communities in advance of food and non-food item distributions, saving them time and building relationships.
- River levels are monitored via SMS, providing real-time risk monitoring and reduction.
- IDPs are informed of returnee programmes, helping them access information about getting back home.
- Communities can report and monitor incidents of violent conflict, helping to hold governments to account and provide evidence of armed group activity.

These examples are from actual programmes that have used SMS to communicate with communities. Below are the main reasons why FrontlineSMS in particular is widely utilised in humanitarian contexts. It:

- **Does not require an Internet connection.** FrontlineSMS for the desktop does not require the Internet to work, which in isolated areas can be difficult to reliably secure.
- **Works with a normal airtime package on an ordinary SIM, in a low-end phone or USB modem.** The hardware required is easy to secure in many places, although modems are occasionally scarce in crisis-affected countries.
- **Works on all operating systems.** Whether your organisation uses Windows, Mac or Linux based computers, FrontlineSMS is available for all platforms available on their website. The forthcoming Cloud version runs in a browser and is OS-agnostic.
- **Laptop-based, useable on the road or during power outages.** FrontlineSMS does not require powerful hardware. The software can run on most laptops, making it highly transportable.
- **Stores all phone numbers and records all incoming and outgoing messages.** All SMS communications are recorded and stored digitally, avoiding time-consuming data entry. Exports to csv are easy.
- **All data lives on a local computer, not on third-party servers.** In the desktop version, all communications are saved locally and can be exported (and should be backed up!) The Cloud version securely stores your data for you.
- **Scalable: Can be sent to individuals or large groups.** Once the platform is set up, any campaign can be easily scaled up to reach more people and gather more data.
- **Enables two-way communication to improve fieldwork or conduct surveys.** SMS can be used to send and collect information.
- **Easy to install and requires little or no training.** The software is user-friendly and resources are easily downloaded before deploying a platform. It is designed to be deployable without training.

“Based in Africa in a country where broadcast technology is controlled by a dictatorial government this software has enabled me to communicate with the public at large. I am able to run my project without drawing the unnecessary attention to my self - a good thing in this neck of the woods.”

**Anonymous
FrontlineSMS user,
Central Africa**

- **Supported by a growing community of online users and non-profit users around the world**, as well as by the Social Impact Lab, who offer consulting and training services.

CASE STUDY:

Plan International and FrontlineSMS: Strengthening local and national reporting of trafficking and violence in Benin

In 2009 the [UN report on Violence Against Children \(VAC\)](#) revealed shocking statistics on the under-reported issue of VAC. [Plan International](#) partnered with FrontlineSMS and [Ushahidi](#), a crowdsourced digital mapping platform, to gather and analyse SMS reports on VAC in Benin. Plan organised workshops with the local population and authorities about using SMS as a cost-efficient way of gathering data on child violence. This information was used to target awareness-raising campaigns in areas of high levels of violence.

Hardware used: Nokia phone, windows PC and GSM router.

“The good thing about SMS is that it is relatively cheap compared to voice in most contexts. It is also predictable: know how much an SMS is going to cost you before you send it. This makes a significant difference especially with pay as you go users.”

**Laura Walker
Hudson, CEO
FrontlineSMS**

What are the limitations of Frontline SMS?

FrontlineSMS does not yet support channels other than SMS. Consequently there are several limitations to be aware of when using it to communicate with communities.

- **Literacy:** Users need to be able to read and write SMS, or at least interpret them. They also need to be able to locate and manipulate SMS on the phone (technological literacy). If high levels of this literacy are not present in the community, SMS could be used in conjunction with radio, or to reach community representatives who can spread messages.
- **Culture:** SMS communication might differ from one culture to another. Heads of household might be the only family members with access to a telephone or whose access is not controlled (for example, women and girls might be supervised). Users might not feel comfortable sending information via SMS. Certain kinds of information could be sensitive or embarrassing (for example, reproductive health information). A detailed document on privacy questions can be found in the ‘Further Resources’ section of this document.
- **Money:** Sending an SMS requires a functioning phone. Costs include hardware, electricity to charge the phone and the funds to send an SMS. In some communities this can be a significant barrier to a successful campaign, because charging can cost as much as a day’s wage, and can involve travel.
- **Disability:** Using a phone excludes people with sight disabilities or difficulties using handsets.
- **Quality of Infrastructure:** Remote areas might not have any mobile telecommunication network and after a major disaster these networks are often destroyed or badly affected.
- **Integration to existing systems:** FrontlineSMS supports web connections to other systems and exports to CSV - but where organisational systems are monolithic or tightly controlled, integration with existing organisational IT systems can be challenging.

SMS communication is one way of communicating with crisis-affected communities. Organisations should evaluate the effectiveness of any tool in a given context before deciding to use it. Often a multi-channel approach is the best, as it gives communities choices about how to engage, or combines a platform with great reach, such as radio, with

Frontline SMS Features

Please note that this is not an exhaustive list, but just a few highlights of FrontlineSMS features. FrontlineSMS adds new features regularly. For the most up-to-date version of the software and information about its use, visit the website for latest developments.

Sending, Receiving and Managing SMS

The primary function of FrontlineSMS is to send, receive and organise SMS communication. Through the platform, users can send messages in the same way as email software. This includes an inbox, outbox and trash functions, as well as an archive to efficiently record any activity.

Polls:

FrontlineSMS allows users to collect poll data by SMS. Using the polls function will automatically process responses using keywords and deliver the results in a user-friendly format that can easily be exported.

Automatic Responses:

FrontlineSMS allows users to edit and manage automatic responses in a similar way to an email system. From acknowledgements to information services, this function enables users to outsource the reply work to the software.

Search Function:

Use the search tool to find messages.

Contact Groups:

Organise your contacts into groups to find users easily. You can classify users according to different variables.

“Frontline SMS provides the tools necessary for people to create their own projects that make a difference. It empowers innovators and organisers in the developing world to achieve their full potential through their own ingenuity”
Africa Journal, 2007

CASE STUDY:

IOM, Frontline SMS and Zong provide WASH messages to communities affected by the Pakistan Flood.

In 2010, IOM sent messages about hygiene and sanitation as part of their response to the devastating floods that hit Pakistan that affected approximately 20 million people. Leading the communication response on behalf of the UN ‘Cluster System’ of humanitarian responders, IOM developed over 50 Public Service Announcements (PSAs) in Pashto, Sindhi and Punjabi on topics including from prevention of diarrhea and malaria to durable shelters and fire safety in camps. Using FrontlineSMS saved IOM over \$15,000 compared to the costs of using a commercial supplier. Supported by Zong, the Pakistani subsidiary of China Mobile, the IOM sent free, bulk, informational messages to affected people and humanitarian workers across Pakistan to enhance informational outreach.

Further Resources and Links

FrontlineSMS [Website](#). Source: FrontlineSMS

Download [Page](#). Source: FrontlineSMS

Additional [Case Studies](#). Source: FrontlineSMS

[Introduction](#) to FrontlineSMS. Source: FrontlineSMS

Other Useful Websites

[Crisis Mappers Network](#): An active international community of experts, practitioners, policymakers, technologists, researchers, journalists, scholars, hackers and skilled volunteers engaged at the intersection between humanitarian crises, technology, crowd-sourcing, and crisis mapping.

The [Raspberry Pi project](#):

The Raspberry Pi is a credit-card sized computer that plugs into your TV and a keyboard. It's a 30\$ little PC which can be used for many of the things that your desktop PC does, like spreadsheets, and word-processing.

[Ushahidi](#):

An open source project which allows users to crowdsource crisis information to be sent via mobile.