

Popular Engagement Policy Lab

Innovation in **People-First** Stabilisation

# SMS Engagement in Pakistan

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A Practical Guide for Civil Society, the Humanitarian  
Sector, and Government

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PEPL is a policy lab dedicated to innovation in population engagement. Concentrating on conflict situations and times of instability, PEPL tests and promotes methods of creating productive relationships between institutions and the people they serve.

Critical to that effort is to encourage the spread of innovation in population engagement across disciplines and national borders. From disaster response and development to governance and conflict mitigation, PEPL believes that population engagement methods can yield more sustainable and effective results. By the same token, PEPL believes that it can best support the field of population engagement by learning directly from experts across these disciplines.

In that spirit, PEPL hopes that readers of this guide will offer up their thoughts and experiences – however critical – to both contribute to later versions of this document and to build shared understanding across the field.

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## Contents

1. Introduction	4
2. Summary and Recommendations	5
3. How to Use this Guide	9
4. Part One: Mobile Phone Use in Pakistan	11
a. How many mobile phone users are there in Pakistan?	12
i. Disregard authoritative penetration rates	12
ii. Towards a best-guess mobile penetration rate	14
iii. Adding nuance: from SIM cards to phone users	15
iv. Ownership of multiple SIM cards	16
v. Household access to mobile phones	17
b. Shared and public mobile phone use	19
c. SMS in Pakistan	21
i. Viral texting	22
ii. Romanised Urdu and Pashto	23
iii. SMS, illiteracy and shared literacy	24
iv. Popular SMS use during the floods of 2010	26
5. Part Two: SMS Engagement in Pakistan	28
a. Two ways are better than one	29
b. Broadcasting SMS: approaches and tools	31
i. Non-targeted broadcast SMS	31
ii. Opt-in broadcast SMS	32
iii. Hybrid non-targeted and opt-in	33
iv. Short codes	34
v. FrontlineSMS and RapidSMS	35
vi. Using FrontlineSMS for population engagement	37
c. Social SMS	40
i. Pring	43
ii. Using Pring for population engagement	45
iii. Humari Awaz and ch0paal	46
d. Bottom-Up SMS	48

## Introduction

Mobile phones are approaching ubiquity in Pakistan. Allowing low cost access to community members across class, linguistic and geographical boundaries, the mobile phone can be an effective tool to communicate with ordinary people in Pakistan, as well as to learn from them, and even collaborate with them. This guide provides a research-driven and practical guide for using SMS to do so. It is intended for both Pakistani and international institutions, whether in government, civil society or the humanitarian sector. It represents the findings of its authors only, and, it is hoped, is the first draft of a collaborative document, to which many of its readers might contribute.

This document is intended to provide an understanding both of the range of technical options available for SMS-based communications, and of the ways in which campaigns should be conceived and executed in light of the scope and character of both SMS use and phone use in Pakistan.

It also makes the argument that SMS provides an opportunity to do more with mobile-based communications than simple announcements and polling, useful activities though they are. It argues that the conversational nature of SMS, in Pakistan and elsewhere, allows for sustained, two-way communications with ordinary people.

In structuring SMS communications so that they encourage a response from the population, and so that they establish through iteration a rolling exchange with the population, organisations working for social good will gain the opportunity to improve their communications as they go along: by building their understanding of the audience, by engaging in continual near real-time monitoring and evaluation, and by equipping themselves with a pool of locally-generated messages that can be studied, learned from and (considerately) re-used.

Furthermore, the act itself of engaging in two-way communications gives greater popular credibility and trust to the communicator; the act of seeking a response from an individual, and thus implicitly of valuing his or her opinion, is powerful in itself. The result is more trusted communications and thus more effective communications – and perhaps more effective and trusted institutions too.

## Summary and Recommendations

**Pakistan has 105.15 million active mobile phone connections at the time of writing** according to the Pakistan Telecommunications Authority (PTA), across a population of between 173.59 million and 181.10 million people, using Federal Government and UN figures. That is between 58 and 61 SIM cards per 100 people. However: some people own more than one SIM card, some people share phones (each using a different SIM card), and some people have access to a phone but don't own any SIM cards.

In more concrete terms, two independent surveys cited in this guide show that although less than half the population owns a mobile phone, **more than 70 percent of people in Pakistan have regular access to a mobile phone** through one means or another. Similarly, a 2009 survey by LIRNEasia showed that 37 percent of the poorest 60 percent of Pakistan's adults owned a mobile phone; that the majority had regular access to a mobile phone despite not owning one; and that 47 percent of phone-owners used SMS.

Studies cited in this guide show that **just as many women as men have access to a mobile phone** through one means or another – but that whereas men tend to own a phone, or to use the phone of a friend or of a Public Call Office, **women tend to use a phone owned by an adult male family member**. It seems likely that women's use of mobile phones will be both reduced and circumscribed as a result.

**The use of SMS is common across phone owners of all demographics.** Amongst phone owners in the poorest 60 percent of Pakistan's population, 51 percent of men and 33 percent of women used SMS, according to LIRNEasia's 2009 survey. No data is presently available regarding SMS use amongst those who use a phone but do not own one.

Although literacy rates in Pakistan present a barrier, **illiterate phone users are not excluded from the use of SMS**. It is common for illiterate phone users to ask literate relatives and friends to read text messages to them, and sometimes to write text messages for them as well. That phones are very commonly used by multiple individuals makes such 'shared literacy' practices a fact of everyday life. These factors do indicate that content reaches excluded audiences, but in a scattershot, untargeted fashion.

**Viral text messaging is widespread in Pakistan.** That is, it is common practice for text messages to be forwarded from friend to friend without either knowing the identity of the message's creator. The remarkably low cost of text messages in Pakistan allows this one-to-one viral transmission to achieve quite considerable scale. Jokes, proverbs, quotations, news and religious injunctions are all frequently forwarded, and are often adapted by users with unpredictable effect.

**Text messages are most commonly written in Romanised Urdu.** English and Romanised regional languages are also common, the latter less so. Text messages sometimes use more than one language, and are very often written in 'text speak' slang.

## Tools

Pakistan's tech community has reacted to the global phenomenon of social networking by developing SMS-based social networking and group texting platforms. Pakistan boasts three such 'social SMS' services available to the public at a large-scale, not counting the numerous niche services offered by the five mobile network operators (MNOs). These are cheap to use and could be leveraged to facilitate many-to-many communications between institutions and ordinary people via SMS. Each participant can send and receive messages to and from multiple contacts. This bottom up communication accelerates the viral spread of messages and ideas within the public sphere. Pring, a social SMS platform launched in April 2009, has 600,000 users growing at a rate of 4,000–5,000 per month, and receives more than 300,000 messages from users each day. It is easy to use and can, in dialogue with its developers, be tailored to include bespoke functionality such as the option to host closed spaces for discussion.

This document also provides a practical guide to more conventional techniques for broadcasting text messages: untargeted broadcast SMS, often in bulk; and opt-in broadcast SMS. It details the tools available for executing them, and provides recommendations for how best to harness them in light of the character of SMS use in Pakistan.

## Beyond SMS

The authors fully acknowledge the limits of SMS use for communications in Pakistan: foremost its short format, its not inconsiderable barriers to entry for some key audiences, and the linguistic complexities of 'text speak' slang. The sections of this document addressing the scope and character of SMS use and phone use in Pakistan provide some guidance as to the shape of those limitations, and insight into how to achieve the most within the medium.

Beyond that point, other mechanisms exist for using mobile phones for engagement besides SMS. When approaching illiterate members of the population, it should not be forgotten that the mobile phone has at its core a simple audio function. Two-way communications can also be achieved through mechanisms other than mobile phones. The authors of this guide are writing a series of informal blog posts at [www.pepl.org.uk](http://www.pepl.org.uk) that address ways in which voice-based communications at scale can be achieved in Pakistan, and ways in which local organisations can and are using two-way communications for resolving substantive problems like corruption and land disputes.

## Recommendations

To leverage widespread use of mobile phones across Pakistan's population, while not excluding those who do not themselves own phones, communicators in Pakistan should:

### **1. Use two-way methods for population engagement.**

SMS campaigns should solicit responses from their audiences as far as possible. They should leverage those responses to iteratively improve communications through rolling monitoring and evaluation, active interpretive analysis that builds understanding of audiences, and, in certain situations, quotation and re-use of responses.

Two-way communications using mass media channels in combination with SMS can also be used to engage with the majority of low-income Pakistanis who have regular access to a mobile phone, but who do not possess a phone of their own – such as women and the young.

Furthermore, two-way campaigns are of course not limited to SMS as a means of response. Radio call-in shows, letters pages in magazines, discussion forums online, and TV chat shows: all present opportunities for two-way communications.

### **2. Make full and appropriate use of the three modes of SMS engagement available.**

First: opt-in, two-way broadcasting of text messages using FrontlineSMS should form the mainstay of SMS engagement and should be the primary means through which existing campaigns are supplemented with two-way communications functionality. RapidSMS, a more advanced but less accessible tool, should be considered for large-scale or complex uses.

Second: untargeted, broadcast SMS should be used sparingly, and should be conceived more as a device through which to gain popular attention (much like a billboard or radio advert) rather than a means of communicating substantive content. Untargeted broadcast SMS can be irritating to the recipient, and needs to be performed at scale (and thus at high expense) to be sure of reaching interested audiences.

Third: social SMS services should be used primarily as host platforms for semi-closed networks for direct population engagement, anchored around a concrete social institution, such as a radio chat show, a magazine, or a village development council.

### **3. Design SMS campaigns sensitive to illiterate phone use and the word-of-mouth spread of SMS content.**

Encouraging the spread of text messages by word of mouth, and the retention of their content by illiterate users, requires a very specific set style, structure and vocabulary. This guide provides an introduction to these considerations.

## Sample SMS Engagement Cases

SMS engagement tools – FrontlineSMS and Pring in particular – should first and foremost be used to solve known problems. They can simplify and improve everything from stock management to mailing lists and volunteer labour coordination. Here are some ways in which they could be used to collaborate with and learn from Pakistan’s population:

**Community bulletin board.** A community organization could run a Pring account as a bulletin board for local residents. Users could both contribute and receive adverts and announcements.

**Voting on community development expenditure.** Some community-driven and community-based development models give community members themselves the right to vote on how donor funds should be used in their area. FrontlineSMS could be used to allow community members to vote on spending without having to be present in person.

**Domestic violence.** Rather than requiring the victims of domestic violence to travel to their nearest police station or make a phone call, logging an SMS complaint with a civil society organisation, the police, a community council or local support network could enable women to register abuse even when they might not be able to leave the house. The SMS can even be blank, and simply used as an alert. This could be a critical first step towards intervention.

**Signing a petition.** An advocacy group can send messages to its subscribers asking them to reply ‘yes’ in an SMS if they would like to sign a petition detailed in the message. These replies can be logged and taken to the local authorities when campaigners ask for a change to be made in a regulation or law.



## How to Use this Guide

This document is written in two parts. The first details the authors' understanding of the character of mobile phone use and SMS use in Pakistan. It starts by addressing the vexed question of the number of mobile phone users in the country today. Authoritative estimates published by a number of reliable sources are shown to be untenable, and a replacement set of figures is offered, ranging from how many possess a mobile phone to how many have access to one. It then explores the social nature of phone use: how phones are shared amongst friends, family and neighbours; and how the use of public phones varies. This first part closes with a detailed consideration of SMS behaviour in Pakistan: demographic considerations; viral texting; slang and the cocktail of languages and alphabets; and the use of SMS by illiterate people. Particular attention is drawn here to popular SMS use in Punjab and Sindh after the floods of 2010.

The second part lays out the tools and techniques available for SMS engagement with the population. The first section of this part argues for two-way communications conceptually. The second section investigates the ways and means of broadcasting single text messages out to large numbers of people, and addresses a number of key methods within this broad spectrum. The third section explores a lesser-known approach, that of social SMS: Pakistan is notable in having three operator independent means of conducting many-to-many text messaging. The final section briefly addresses well-known bottom-up methods of SMS use from other disciplines – crisis mapping and citizen journalism.

### Methodological Considerations and Caveats

Unless attributed to a source other than the two authors, all anecdotal insight in this guide derives from field research in Pakistan's Khyber-Pakhtunkhwa (KP) province between November 2008 and January 2011, and describes the behaviour of adult male Pashtuns. Neither author is Pakistani, nor fluent in any of the languages of Pakistan, nor even a Pakistan expert. They are communications and peace-building professionals, slowly finding their way in the study of the country. They hope that readers will forgive any mistakes they may have made.

The areas in which the authors have most frequently travelled in KP are Peshawar and Mingaora. Subordinate locations include urban and rural areas of the Malakand, Mardan and Peshawar Divisions of KP, from the upper reaches of the Swat, Dir and Shangla valleys to the towns of the plain of Peshawar.

Such regionally, ethnically and gender-bounded qualitative work is complemented in this study by a number of national surveys, each accessing men and women aged 15 or more from across Pakistan's four provinces. Research of both kinds is limited in the non-provincial regions of Pakistan: the Federally Administrated Tribal Areas (FATA), Gilgit-Baltistan, and Azad Jammu and Kashmir. Findings from this guide should not be extrapolated to these areas without supplementary research and analysis.

## Disclaimer

This document includes examples of ways in which SMS techniques could be integrated into notional communications campaigns in Pakistan. The campaigns mentioned have been included purely for the purposes of indicating what types of interventions the authors consider best suited to each of the types of SMS engagement available. This guide seeks to advance the considered use of SMS engagement in Pakistan, and does not pass comment on or seek to advance any particular types of communications campaigns.

## Collaboration

This document represents the first draft of a collaborative effort. Some of its readers will have come across better examples of communications projects than those used by the authors. Some might have more comprehensive data. Others will have a better understanding of the governance, welfare and humanitarian problems mentioned. PEPL would like to learn from its readers.

If any reader would like to make a correction, recommend a particular usage of a tool, expand upon a particular section, or just comment on the contents of this guide, they should feel free to email [contact@pepl.org.uk](mailto:contact@pepl.org.uk). The authors would be delighted to receive their input.

PEPL will draw on all contributions, and the authors' continuing research, to periodically edit and re-publish this guide, with all contributors credited.

## **Part One: Mobile Phone Use in Pakistan**

## How Many Mobile Phone Users Are There In Pakistan?

### Bottom line:

There were 105.152 million active SIM cards in Pakistan in February 2011. Population projections for 2011 issued by the UN and Pakistan's Federal Government allow us to calculate an estimated rate of between 58.1 and 60.6 SIM cards for every 100 members of the population – or a 58.1 percent to 60.6 percent penetration rate. These figures contrast with a rate of 66.8 percent claimed by Pakistan's Telecommunications Authority.

The number of SIM cards does not equate to the number of phone users, however. Multiple SIM ownership, shared use of phones, and the ownership of SIM cards by non-phone owners all complicate matters. The number of phone owners will be substantially lower than 102 million, but the number of people with regular access to a phone will be higher.

2009 survey data concerning the poorest 60 percent of Pakistan's population shows that although only 37 percent owned mobile phones, 96 percent were phone users. These numbers cannot be extrapolated to the remaining and richer 40 percent of the population, but a 2008 InterMedia survey commissioned by the BBC shows that 70 percent of people had access to a mobile phone in the home, and 81 percent have access to a phone anywhere – far higher than the penetration rate would indicate.

### Disregard Authoritative Penetration Rates

The shorthand statistic most often used for indicating the extent of mobile phone ownership within a society is the 'penetration rate' – a measurement of "mobile cellular subscriptions per 100 people", in the World Bank's phrasing. Commonly used in this context, the terms 'subscription' and 'subscriber' can be misleading. The penetration rate refers to the number of unique mobile phone numbers – that is, active SIM cards – per 100 members of the population.

There is of course no one-to-one relationship between SIM cards, handsets and phone owners. Ownership of multiple SIM cards is common, as is the sharing of phones amongst multiple users, and, perhaps less common, the ownership of SIM cards by non-phone owners, such as family or friends who share a phone.

For Pakistan, the penetration rate derives from monthly reports to the Pakistan Telecommunications Authority (PTA) from the five mobile network operators, each stating the number of active SIM cards on their books that month. One difficulty with this approach is that both the PTA and the operators could conceivably benefit from reporting high figures to demonstrate success. That there is little transparency over the process should be a cause for some concern. However, the PTA is presently pressuring the five mobile network operators to de-register inactive SIM cards: a push that has contributed to a slowed growth in the penetration rate since 2008. Although not transparent, the mechanism would thus appear to be honest.

Despite such difficulties, the penetration rate *does* give us a yardstick with which to compare the approximate availability of mobile phones across countries, so long as one possesses a reasonable and consensus figure for their national populations. Producing such

a figure for Pakistan, however, requires some rather heroic extrapolations, given that the last census was performed in 1998, and the last before that in 1981.

To indicate the range of penetration rates developed as a consequence of this last difficulty, consider these four authoritative statistics for 2008:

<b>Institution</b>	<b>Mobile subscribers per 100 population in 2008</b>
International Telecommunications Union <sup>1</sup>	49.7
Pakistan Telecommunications Authority <sup>2</sup>	54.6
Business Monitor International <sup>3</sup>	55.9
World Bank <sup>4</sup>	57.0

Table 1 - 2008 Mobile Penetration Rates

Despite the significant range proffered, all of the above share the same source for the number of SIM cards in circulation – that of the PTA, second on the list, which had 88,019,812 subscribers on its records at the time. Business Monitor International's figure is the exception, but only in that it uses the PTA's year-end figure for 2008, not the standard mid-year figure.

Were one to attempt to calculate the number of mobile phone users from these penetration rates using the World Bank's projection for Pakistan's population in 2008, one would achieve SIM card numbers of between 82 million and 94 million: a wide variance from the 88 million source figure provided by the PTA.

<b>Institution</b>	<b>Active SIM Cards</b>	<b>Penetration Rate</b>	<b>Population</b>
World Bank	88,019,742	57.0%	166,111,487
International Telecommunications Union	88,019,742	49.7%	(177,102,097)
Pakistan Telecommunications Authority	88,019,812	54.6%	(161,208,447)
Business Monitor International	89,907,000	55.9%	(160,835,420)

Table 2 – 2008 Mobile Penetration Rates – Expanded

<sup>1</sup> ITU data available as a Microsoft Excel file here: <http://www.itu.int/ITU-D/ict/statistics/material/excel/MobileCellularSubscriptions00-09.xls>

<sup>2</sup> [http://www.pta.gov.pk/index.php?option=com\\_content&task=view&id=269&Itemid=658](http://www.pta.gov.pk/index.php?option=com_content&task=view&id=269&Itemid=658), accessed 8<sup>th</sup> March 2011.

<sup>3</sup> <http://www.businessmonitor.com/telecommunications/pakistan.html>, accessed 8<sup>th</sup> March 2011.

<sup>4</sup> <http://data.worldbank.org/indicator/IT.CEL.SETS.P2>, accessed 8<sup>th</sup> March 2011.

This variance results from the range of population figures used. Other than the World Bank, none of these organizations provides a population figure from which their penetration rates were calculated, but Table 2 includes (in grey text) the national populations implied by their penetration rates.

None of the implied population totals align with available figures for 2008. The Pakistan Census Organisation (via the UN's Office for the Coordination of Humanitarian Affairs, or UNOCHA) possesses a formula for projecting the population from the 1981-1998 censuses: the resultant figure for 2008 is 166.69 million.<sup>5</sup> The Ministry of Population Welfare projects Pakistan's population through its Population Clock, which for 2008 has a figure of 166.41 million.<sup>6</sup>

Only the World Bank's population figure comes close to those provided by the federal government, but closer inspection reveals that their calculations are off in the other direction: their data is internally inconsistent. They cite a 57.0 percent penetration rate, but their own population projection would have produced a figure of 94.683 million registered SIM cards: not the 88.019 million that they sourced from the PTA. The correct penetration rate according to their data would be 53.0 percent.

In short, all is chaos. We need to start from scratch.

### Towards a Best-Guess Mobile Penetration Rate

The PTA reports that in February 2011 the number of SIM cards had risen to 105.15 million across the five mobile network operators. This is the most up to date figure at time of writing.<sup>7</sup> Added to this, there are three population figures available with which to produce a penetration rate: from the UN Population Division (for 2010), the Pakistan Census Organisation (for 2011, via UNOCHA), and Pakistan's Federal Ministry of Population Welfare (also 2011). All three extrapolate figures from the 1981 and 1998 Pakistan censuses, but each using a different methodology.

Institution	Population	Penetration Rate
Pakistan Census Organisation/UNOCHA <sup>8</sup>	181.10 million (2011)	58.06%
Ministry of Population Welfare <sup>9</sup>	177.10 million (2011)	59.37%
UN Population Division <sup>10</sup>	173.59 million (2010)	60.57%

Table 3 - Best Guess Penetration Rates, 2010 - 2011

<sup>5</sup> [http://pakresponse.info/figures/baseline/Pakistan\\_Tehsil\\_population\\_estimates\\_for\\_2010.xls](http://pakresponse.info/figures/baseline/Pakistan_Tehsil_population_estimates_for_2010.xls), accessed March 8<sup>th</sup> 2011.

<sup>6</sup> <http://www.mopw.gov.pk/PopulationProjection.aspx>, accessed March 8<sup>th</sup> 2011.

<sup>7</sup> [http://www.pta.gov.pk/index.php?option=com\\_content&task=view&id=269&Itemid=658](http://www.pta.gov.pk/index.php?option=com_content&task=view&id=269&Itemid=658), accessed 26<sup>th</sup> May 2011.

<sup>8</sup> [http://pakresponse.info/figures/baseline/Pakistan\\_Tehsil\\_population\\_estimates\\_for\\_2010.xls](http://pakresponse.info/figures/baseline/Pakistan_Tehsil_population_estimates_for_2010.xls), accessed March 8<sup>th</sup> 2011.

<sup>9</sup> <http://www.mopw.gov.pk/PopulationProjection.aspx>, accessed March 8<sup>th</sup> 2011.

<sup>10</sup> <http://esa.un.org/unpd/wpp/unpp/p2k0data.asp>, accessed May 26<sup>th</sup> 2011 – all variants for Pakistan produce the same population project.

Assuming that the PTA's original figure for the number of SIM cards is reliable – and there are presently no alternatives – a reasonable range can be developed: 58.1 percent to 60.6 percent. That is, 58.1 to 60.6 unique SIM cards per 100 members of the population in 2011. Table 3 demonstrates these calculations.

By way of comparison, using the same number of SIM cards, the PTA provides a penetration rate of 66.8 percent for February 2011, which would require a national population of no more than 157.43 million – more than 20 million less than the Federal Government's two population projections.

### Adding Nuance: from SIM Cards to Phone Users

Only one large-scale survey programme performed in Pakistan enables a systematic assessment of how the number of SIM cards relates to the number of phone users in the country: LIRNEasia's 'Teleuse at the Bottom of the Pyramid' series, or 'Teleuse@BOP', which surveys a representative sample of the poorest 60 percent of Pakistan's adult population.<sup>11</sup> The survey, conducted every other year, is published online in the form of a number of slide-decks, but not as a single comprehensive report. The dataset is available online in SPSS format, however, and LIRNEasia kindly agreed to provide PEPL with a copy of the original questionnaire.<sup>12</sup> The authors have limited explorations of the dataset to simple descriptive analysis for this guide, but hope to secure funding to support more advanced computational analysis of what is an absolutely invaluable dataset.

The findings of the LIRNEasia dataset, however, can only be applied to the poorest 60 percent of the population. To that end, two other published surveys are used here to complement the findings: InterMedia's 2008 national poll for the BBC, available on its AudienceScapes platform;<sup>13</sup> and GroupM's less statistically rigorous survey of four urban demographics, also from 2008. Two upcoming surveys are also worth pursuing. First, from drafts shared with PEPL, Gallup Pakistan's Mobile Life Poll (a working title) appears to be promising, particularly in its investigation of the manners and norms surrounding mobile phone use. Second, a national survey commissioned by the IOM's Mass Communications Programme is forthcoming, to which PEPL has contributed questions regarding the familiarity and competence of members of the population with technical and cultural uses of mobile phones. Results from neither are available at the time of writing.

The latest LIRNEasia survey, with a sample of 1,814 respondents nationwide and performed in 2009, shows that phone ownership sat at 41 percent, and mobile phone ownership specifically at 37 percent, but 96 percent had used a phone within the three months preceding the survey. Those same 96 percent of respondents made an average of six outgoing calls per week. The penetration rate that emerges from the number of SIM card owned by respondents is *at least* 54.4 SIM cards per 100 members of the population – a figure explained below.

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<sup>11</sup> All respondents to the LIRNEasia survey were at least 15 years of age.

<sup>12</sup> The LIRNEasia dataset and reports can be downloaded here: <http://lirneasia.net/projects/2008-2010/bop-teleuse-3/>. Since LIRNEasia data in this report derives from that single dataset, future mentions of the LIRNEasia dataset will not be footnoted.

<sup>13</sup> All respondents to the InterMedia poll were at least 15 years of age.

To put that in terms of the poorest 60 percent of the 2009 population, the data indicates that only some 40.33 million owned mobile phones, but 104.64 million (96 percent) were phone users.

### Ownership of Multiple SIM Cards

The LIRNEasia survey asked all those who owned a phone how many SIM cards they owned *and* used. 22 percent reported that they had more than one SIM, and 6 percent replied that they had more than two. The same question was not asked of the many phone users who did not own a phone, so the results cannot be extrapolated to the survey population as whole.

The 727 respondents owned between them 986 SIM cards. This number alone, when divided by the total survey population of 1,814 phone users, provides a penetration rate of 54.4 percent for 2009 (the year the survey was conducted). Since it is unclear how many of the phone users without mobile phones owned SIM cards, however, it can only be said that the LIRNEasia survey shows a penetration rate of *at least* 54.4 percent. Compared against PEPL's best guess range for the national penetration rate in 2009 – between 54.35 and 55.51 percent, using the same method as detailed above – this figure indicates that SIM card ownership was not significantly more or less common amongst the poorer segments of society in 2009 than amongst the population as a whole.

The results also demonstrated that male phone owners were much more likely to own more than one SIM card than female phone owners were. Rural residents were slightly more likely to do so than urban residents as the below table indicates.

<b>Demographic within poorest 60%</b>	<b>Owned one or more SIM cards</b>	<b>One SIM card</b>	<b>More than one SIM card</b>
ALL	727	78 %	22 %
Urban	457	80 %	20 %
Rural	270	75 %	25 %
Male	541	76 %	24 %
Female	186	85 %	15 %

Table 4 - Multiple SIM Card Ownership, by Demographic Group

Interestingly, when presented with a list of common cost-saving measures used by phone owners, almost no-one (only one of the 1,814 respondents) replied that they used more than one SIM card to take advantage of multiple deals and discounts – an explanation the authors had considered for multiple SIM ownership. The most convincing explanation provided to PEPL of the prevalence of ownership of multiple SIM cards is that network coverage, although improving, can be at times patchy. This explanation accords with the experience of one of the authors, who regularly used three SIM cards when travelling between Peshawar and the Malakand Division, in order to be sure of having signal.



## Household Access to Mobile Phones

Both the LIRNEasia survey and InterMedia's 2008 survey for the BBC provide statistics for a further, final means of approximating mobile phone use in Pakistan: the proportion of the population having access to a mobile phone in the house by one means or another.

The national-level data produced by these surveys is shown below, with InterMedia's quoted directly from its AudienceScapes platform, and LIRNEasia's deduced independently from its dataset. InterMedia's dataset has been broken out by income to provide a fairer comparison with the LIRNEasia data.

	<b>LIRNEasia</b>	<b>InterMedia: Population by Income Level</b>			
	Poorest 60%	Low	Middle	High	All
Access to a Mobile Phone in the Household	65%	50%	71%	82%	70%

Table 5 - Access to a Mobile Phone in the Household, by Income Level

### Implications for Population Engagement

81 percent of Pakistan's population had access to a mobile phone through one means or another in 2008. Amongst the poorest 100 million, although only 37 million owned a mobile phone, 96 million had used a mobile phone in the previous three months when surveyed in 2009.

Mobile phones are nearing ubiquity of use in Pakistan, if not ubiquity of ownership. They should be considered the foremost tool for directly accessing popular opinions at scale: both to learn from ordinary people and to collaborate with them.

It must not be forgotten however that there are considerable barriers to mobile phone ownership and use: literacy and gender are the most significant. As the next section will show, however, neither women nor the illiterate are entirely excluded.

Relatedly, one-way uses of SMS for communications can only be relied upon to reach the portion of the population that owns mobiles phones. Two-way communications can be used to achieve engagement with the greater number of Pakistanis who have regular access to a mobile phone, but who do not possess a phone of their own.

### Those numbers again:

For Pakistan's population in 2011, estimated between 173.6 million and 181.1 million:

	<b>Number</b>	<b>As % of population</b>
Unique phone numbers	105.2 million	58% to 61%

For Pakistan's estimated population in 2008, rounded to 166.5 million:

	<b>Number</b>	<b>As % of population</b>
Unique phone numbers	88.0 million	53%
Access to a mobile phone in the household	116.6 million	70%
Access to a mobile phone anywhere	134.9 million	81%

For Pakistan's poorest 60 percent in 2009, rounded to the poorest 100 million:

	<b>Number</b>	<b>As % of 100 million</b>
Unique mobile phone numbers	54 million	54%
Ownership of a mobile phone	37 million	37%
Access to a mobile phone in the household	65 million	65%
Use of a mobile phone in past 3 months	96 million	96%

Tables 6, 7 & 8 – Those Numbers Again

## Shared and Public Mobile Phone Use

### Bottom line:

Although far more men than women owned mobile phones amongst Pakistan's poorest 60 percent in 2009, a near equal number of respondents of each gender reported using a mobile phone in the three months preceding the survey – in both cases over 90 percent.

That finding is tempered by the fact that access to a mobile phone amongst poor women was most frequently achieved through a male member of the household between the ages of 25 and 50. Men in this demographic tended to use their own phone (59 percent) or a public phone (24 percent). Only 17 percent of women had in the previous three months used a phone that they owned, and only 10 percent had used a public phone.

A national survey in 2008 showed lower access levels, with 91 percent and 72 percent of urban and rural men having “access to a mobile phone anywhere”, respectively against 88 percent of urban women and 63 percent of rural women. These latter figures include respondents of all income levels.

Popular mobile phone use in Pakistan is characterised by its markedly social aspect. Phones are shared amongst friends and relatives, and especially within the household, as data in the previous section made clear. One particular aspect of this trend worth emphasising is the disparity between male and female shared phone use. More than 90 percent of both men and women had used a phone in the three months preceding the LIRNEasia survey, but whereas more than half of male respondents stated that they most frequently used a phone that they owned, only one in six female respondents said the same.

More than half of female respondents stated that they most frequently used the phone of another household member, and more women most frequently used the phone of a friend or neighbour than a phone that they owned. Men, on the other hand, were five times as likely as women to use public phones, but very rarely used the phone of a friend or neighbour.

Use of public-access phones by the poor in Pakistan used to be much higher. Whereas more than 55 percent of the LIRNEasia survey's respondents stated that they used public phones in 2006, less than 20 percent did in 2008, and only 8 percent picked a public phone as their most commonly used phone. Against this reduction in the use of public phones stands PTA data to the effect that the number of public payphones in Pakistan grew in the same period from 353,000 to 449,000.<sup>14</sup>

Of the 17 percent who stated that they regularly used a public phone, 40 percent said their principal public phone was located in a Public Call Office (PCO), and 36 percent stated that they used the phone in a nearby shop.

PCOs have traditionally contained one or more fixed-line kiosk phones, manned by an attendant. Increasingly, micro-entrepreneurs are using mobile phones to fulfil the same function, selling usage by the minute, often alongside landline services. A senior journalist associated with Dawn.com attested to PEPL that PCOs have been known to function through social connections: it is not unheard of for Mobile PCO operators to send a runner

<sup>14</sup> [http://www.pta.gov.pk/index.php?option=com\\_content&task=view&id=269&Itemid=658](http://www.pta.gov.pk/index.php?option=com_content&task=view&id=269&Itemid=658), accessed 8<sup>th</sup> March 2011.  
Figures rounded to the nearest thousand

to find a certain individual to take a call, or to arrange amongst themselves a time that two customers can speak to one another, at mutual convenience to the operators and customers alike.<sup>15</sup>

When compared against the broader population, PCO users were disproportionately rural. Both shop and PCO users were very highly disproportionately male.

<b>Demographic</b>	<b>PCO Users</b>	<b>Shop Users</b>	<b>Poorest 60% of Population</b>
ALL	100%	100%	100%
Urban	46%	36%	36%
Rural	54%	63%	64%
Male	75%	71%	50%
Female	25%	28%	50%
15-25 years	35%	38%	37%
26-35 years	25%	23%	27%
36-45 years	16%	19%	20%
46-52 years	13%	13%	10%
53+ years	11%	5%	6%

Table 9 - Preferences for Public Phone Types, by Demographic Group

### Implications for Population Engagement

Since women are frequently users but not owners of mobile phones, one-way communication through mobiles should not be relied upon to reach a significant proportion of women. However, communications through radio, TV, or other channels that encourage women to text in to the communicator should prove successful, since the considerable majority of women interviewed across two surveys had access to a mobile phone through one means or another.

The LIRNEasia dataset does not enable us to appreciate whether women who do not own phones keep a separate SIM card from that used by the (usually male) owner, however. There may be limitations upon what women are willing to do with a mobile phone owned by a male relative, especially if they do not possess SIM cards of their own.

Similarly, some men do not own mobiles but instead commonly use public phones. Although one-way communications via SMS would not reach these men, they could be engaged through radio, TV or other channels, and encouraged to contribute via public phones.

<sup>15</sup> Interview, London. March 2011.

## SMS in Pakistan

### Bottom line:

Data on the prevalence of SMS use is only available for those amongst the poorest 60 percent that own phones. 45 percent of that group use SMS, according to a 2009 survey, including 60 percent of those between the ages of 15 and 25, and 30 percent of female respondents. However, one 2010 study of flood-affected families in Sindh and Punjab provinces found that only 4 of 249 interviewed phone owners had received a text message containing helpful humanitarian information from an organisation.

Text messages are commonly forwarded from friend to friend: the remarkably low cost of text messages in Pakistan allows this one-to-one viral transmission to achieve quite considerable scale. Jokes, proverbs, quotations, news and religious injunctions are all frequently forwarded, and are often adapted by users with unpredictable effect.

Text messages are most commonly written in Romanised Urdu. English and Romanised regional languages are also common, the latter less so. Text messages sometimes use more than one language, and are very often written in 'text speak' slang.

The social character of mobile phone use in Pakistan is made most clear in the context of SMS use. Unfortunately, there are yet to be any large-scale ethnographic studies of SMS use in Pakistan. Direct observation however reveals a wealth of creative uses, as well as a variety of culturally situated ones. Few of these have been studied in any systematic fashion, and can only be brought together here with the emphatic caveat that at present these remain anecdotal.

First the hard data. LIRNEasia's survey of the poorest 60 percent of Pakistan's population tells us that 45 percent of poor phone owners send and receive SMS. Sadly, the survey did not investigate SMS use amongst the majority of phone users that did not own a phone. The spread across genders and age groups amongst phone owners is shown in the table below.

Demographic	Phone Owners that use SMS
Male	48.9%
Female	30.4%
15-25 years	59.8%
26-35 years	39.4%
36-45 years	36.9%
46-52 years	30.0%
53+ years	9.7%

Table 10 – SMS Use amongst Pakistan's Poorest 100 million by Age and Gender

In a GroupM survey of 3,640 urban Pakistanis, 89 percent of phone-owning male workers and students, and 76 percent of phone-owning housewives and female students, used their phones for SMS. Since 91 percent of male respondents and 86 percent of female respondents stated that they owned phones, it can be concluded that 81 percent of male workers and students have phones and use SMS in urban areas, as compared to 49 percent of housewives and female students.<sup>16</sup>

## Viral Texting

Viral texting is common in Pakistan. Proverbs, religious quotations, jokes, news and other snippets circulate from user to user, most often entirely divorced from their original creator. Some of the high level of viral activity is accounted for by low SMS prices. For example, at the time of writing Mobilink's most expensive pay-as-you-go SMS bundle provides up to 6,000 SMS over a period of a month, for PKR 150. The authors have received poems, sayings from famous historical figures, proverbs and, to cross categories briefly, MMS videos of extremist violence – all passed on by the sender but not composed by them.

One memorable example sent to one of the authors by a Pashtun in Peshawar is reproduced here:

### BEST SMS

"A mother makes her son "GENTLE" in 20 years, but a Girl makes him "MENTAL" in just 20 minutes"

(Hitler)

Looking at the origin of this message online takes one to several SMS repositories, including [www.facebook.com/SMS4Share#!/SMS4Share?sk=info](http://www.facebook.com/SMS4Share#!/SMS4Share?sk=info), a page on Facebook where users are encouraged to send in their 'Best SMS'. The page, set up by [www.latestsms.com](http://www.latestsms.com), advertises itself by writing 'We aim to cover all events and provide you "The Best" SMS Messages collection.' One of the submissions is similar to the message above (minus the rather incongruous attribution to Hitler):

A mother makes her son GENTLE in 20 years

BUT

A girl makes him MENTAL in 20 sec ..... !

This process allows us to see the convergence of online social media and SMS, as well as the evolution and adaptation of messages that receivers might think make a joke more amusing before they send it on. A further look into online SMS repositories reveals collections of Pashto language SMS written in Romanised Pashto, as well as instructional videos in Urdu for how to send and receive free messages online using these resources.<sup>17</sup>

<sup>16</sup> 'Pakistan's First Ever Radio and Establishment and Listenership Study', *GroupM and Oasis International*, 2008  
<[http://www.brandsynario.com/uploads/researchdata/info-to-be-used\\_RADAR.pdf](http://www.brandsynario.com/uploads/researchdata/info-to-be-used_RADAR.pdf)> [accessed 4 March 2011]

<sup>17</sup> A repository of Pashto language SMS can be found at: <http://www.pashtosms.com/> and an instructional video on how to communicate two-ways over the internet can be found here: <http://www.sendsms.pk/how-to-receive-sms.php>

## Romanised Urdu and Pashto

SMS use in Pakistan is a linguistically complex practice. A recent 'nationally representative' Gallup Pakistan survey asked the question: "*Usually in which language do you use for sending SMS from your mobile phone?*" 37 percent of respondents claimed that they sent SMS in Urdu but written in the Roman alphabet, while 15 percent said that they wrote messages in Urdu in the Nasta'liq Urdu script. 17 percent said that they wrote in English.<sup>18</sup> One of the survey's findings was that a higher proportion of urban residents, mostly male and under the age of 30, wrote messages in Roman Urdu, whereas rural residents more commonly wrote their messages in the Nasta'liq Urdu script.

In the predominantly Pashto speaking areas in which the authors have spent time, phone users send text messages in both Roman Urdu and Roman Pashto. Interestingly, certain users have adopted abbreviated 'text speak' without knowing the root word of the abbreviation. For example, the letter 'n' is used as an abbreviation of the word 'and'. Certain phone users in Malakand Agency will use it in Roman Urdu SMS to mean 'and', while not knowing the English word from which it derived. It's worth noting that there is considered to be significant regional variety in text 'dialects', so it is hard to make any assumptions about how far this particular trend, or others similar to it, is followed.

Three factors together result in the majority of SMS in Pakistan being written at least in Romanised Urdu, and in many cases in combination with English. First, texting in the Latin alphabet is much easier than texting in the Nasta'liq Urdu script: the Latin alphabet has fewer characters, so one has to press a button fewer times to achieve the desired character; Nasta'liq characters require more pixels, reducing the number of characters one can use in a text message; and many phones are unable to render Nasta'liq text. Urdu script appears in Unicode, a computing industry standard for encoding writing systems. One SMS can contain a maximum of 70 Unicode characters per message. A standard SMS in Roman letters (known in telephony as the GSM alphabet) can contain up to 160 characters. Secondly, literacy is most common in the languages of instruction at secondary school: English and Urdu, although for most these are not first languages.<sup>19</sup> Thirdly, English vocabulary permeates much spoken Urdu, and both Urdu and English vocabulary permeate the regional languages of Pakistan.

A very distinct style is thus emerging, close to spoken Urdu. Text messages taken from ch0paal's corpus illustrate the combination of English and Romanised Urdu:

Ok bey dua ji & Aeni apna kayal raky ga. Aghar zindagi rahe tu phir bt kary gy ok And bey otherz memberz

nahn hamari Aesi klsmat kahan jo ham syed hn. Kash Hoty Per bi thankx. Ap Sania ki kuch lagti ho.i m frnd ya family member

<sup>18</sup> 'Preferred Medium for Communicating with Others Via SMS: Gilani Poll/Gallup Pakistan', *Gilani Research Foundation*, 17 September 2009  
<<http://www.google.co.uk/url?sa=t&source=web&cd=1&sqi=2&ved=OCBwQFiAA&url=http%3A%2F%2Fwww.gallup.com.pk%2Fpolls%2F7-12-09.pdf&rct=i&q=7-12-09.pdf%20gilani%20research%20foundation&ei=4qGDTafqB4rRhAfamdGxBA&usq=AFQjCNEIXRwWv1qmiXaPPLkmTyzDBf2yhA&cad=rja>> [accessed 16 March 2010]

<sup>19</sup> <http://www.audiencescapes.org/country-profiles-pakistan-communication-habits-demographic-groups-regional-diversity-language-linguistic-urban-rural>, accessed March 1, 2010.

## Implications for Population Engagement

SMS is widespread, cheap and accessible. Its particular character of use in Pakistan presents significant challenges to the communicator, however. The highly distinctive style of text messaging means that messages received in this format are difficult to process, analyse and leverage either statistically or through software. PEPL is in contact with a team at Johns Hopkins University working to develop machine translation of precisely this style of SMS content – the prototype is presently at a very early stage in its development.

Large-scale or data-driven approaches to SMS engagement will thus require significant amounts of manual labour to clean, categorise and analyse text messages. This is not a problem unique to Pakistani SMS usage however: machine processing always results in a loss of fidelity, and needs at the very least to be complemented by human labour. The Ushahidi deployments in Haiti and, more recently, in Libya (the latter drawing on the impressive Stand-By Task Force labour pool) should be first points of call for those seeking to learn how best to find, motivate and manage the (usually voluntary) labour required.

## SMS, Illiteracy and Shared Literacy

Low levels of literacy in certain regions and communities of Pakistan present problems for large-scale SMS communication. While text messaging is not a panacea for difficulties in communicating with communities in Pakistan, an SMS does have the potential to reach a wider audience than just its original recipient. Relatedly, illiterate recipients have a number of means at their disposal to access the meaning of text messages sent to them, and even to respond. Although more field research is needed to draw stable conclusions, the authors of this paper have acquired some anecdotal evidence from their time in the field that merits development here.

The authors discussed with residents of Swat District how illiterate members of the community receive information and understand their text messages. First it was explained that a magazine or newspaper could often have a longer shelf life than one might expect because they would be left in a *hujra* for people to read.<sup>20</sup> Respondents stated that when friends gather in the *hujra*, a literate member of the group would often read out articles from the magazine or newspaper for the benefit of others.

Second, interviews addressed how this notion of shared literacy can help illiterate phone users understand their text messages that they cannot read. This is not only relevant to emergency situations, for example disaster-warning scenarios, but also to communicators assessing how best to reach illiterate members of the population via text message. It was explained that, as a solution, an illiterate phone user would take the phone to a literate friend or family member so that the message could be read to him or her.

It would appear that shared literacy also functions in the other direction. The LIRNEasia dataset shows that 8 percent of those that use mobile phones to send SMS usually asked others to write their text messages for them.

Further research on shared literacy may allow communicators to analyse how the content of text messages is orally disseminated through communities, and how messages can be designed specifically for the illiterate user. Are there visual cues in particular styles of text messages that illiterate phone users can identify as spam, for example?

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<sup>20</sup> A *hujra* is a social gathering place often hosted by a wealthy Pashtun.



We can learn some lessons here from a rather unexpected quarter: the discipline of Human-Computer Interaction Design (HCID). A collaborative team drawn from Pakistani and American universities explored between 2007 and 2009 the use of audio-driven information systems to assist community health-care workers in Sindh province. They produced a prototype called HealthLine. HealthLine's designers have published a practical guide to information management amongst illiterate individuals in Pakistan. They challenge the term 'illiterate', positing 'oral' in its place, and provide a nine-point breakdown of key features of oral information management, followed by extensive recommendations for research and information system design. Many of these are directly relevant, but only the two points most salient to this report are summarised here:

- 1. In oral societies, information cannot be stored: it is kept in circulation only through repeated verbal re-telling.** In this context, it should be borne in mind that "since oral knowledge vanishes unless repeated again and again, oral cultures place a premium on repeating previously held knowledge rather than experimenting and discovering new knowledge."
- 2. Re-telling should not be confused with repetition.** "Storytellers dynamically render different parts of [communal] knowledge at different occasions, altering the content based on the current political scenario, social sentiment, and immediate audience. Since this knowledge is never written down, it is fixed neither in form or content, nor is it repeated word for word."<sup>21</sup>

The extent to which illiterate individuals are part of an oral society or culture in Pakistan is a question that the authors of this guide are keen to pursue. It would certainly seem that elements of oral culture remain strong amongst some Pashtuns communities in the north west: *tappa*, proverbial poetic couplets, seem to the authors to be in considerable circulation in person, over SMS and at literary occasions. It is difficult to judge at this stage how far a coherent 'oral culture' can function, however, in the face of growing literacy rates.<sup>22</sup> Be that as it may, HealthLine's insights into oral culture in Sindh can serve as an initial basis for designing communications for illiterate audiences across Pakistan, as the below recommendations make clear.

### Implications for Population Engagement

SMS content that is intended to be spread by word of mouth should be designed with illiterate users in mind. The HealthLine team's recommendations for encouraging information uptake by illiterate or oral individuals include the below. All are direct quotations from their text.

- Narrative stories are more memorable and more effective at conveying information than neutrally listed bullet points.
- Rhythm aids recall.
- Linguistic style should be structured additively, not hierarchically.
- Redundancy needs to be embedded in the content.
- Each and every word needs to be understood.
- Abstract categories should be avoided.

<sup>21</sup> Jahanzeb Sherwani, Nosheen Ali, Carolyn Rose, Roni Rosenfeld. 'Orality-Grounded HCID: Understanding the Oral User', in *Information Technologies & International Development*, Special Issue on Human Computer Interaction and Development, December 2009.

<sup>22</sup> <http://data.worldbank.org/indicator/SE.ADT.LITR.ZS>, accessed 18<sup>th</sup> March 2011.

## Popular SMS Use during the Floods of 2010

The summer of 2010 saw such heavy flooding along the length of the Indus River that one-fifth of Pakistan's land area was under water, according to the National Disaster Management Authority.<sup>23</sup> An organisation called Communicating with Disaster Affected Communities (CDAC), which was working at the time to facilitate two-way communications in the humanitarian sector, conducted research into how those affected by the disaster preferred to receive critical humanitarian information. Although it has now concluded its activities in Pakistan, CDAC's research has left the humanitarian community with some stark indicators of the distance that still needs to be travelled.

In November and December of 2010 CDAC facilitated a survey to investigate the quality and character of access to humanitarian information amongst communities affected by severe flooding in Sindh and Punjab provinces. The survey was conducted by Internews, and its findings are available for download on CDAC Pakistan's website, <http://cdacpakistan.wordpress.com/>. Its full dataset is also available online, at [http://www.surveymonkey.com/sr\\_pass.aspx?sm=6kD5Jyh0YxjWMx%2bZFvKzEvm49fKvHSoCxVOS41GLO8I%3d](http://www.surveymonkey.com/sr_pass.aspx?sm=6kD5Jyh0YxjWMx%2bZFvKzEvm49fKvHSoCxVOS41GLO8I%3d). When prompted, users should enter the password 'InfoPakFloods'.

Amongst a number of illuminating findings, CDAC reported that only 4 of the 1,072 respondents interviewed across Punjab and Sindh received any helpful information via SMS during the crisis, despite moderate mobile phone ownership (27.2 percent) and moderate literacy (32.3 percent, self-identified).

Of the 505 respondents from surveyed communities in Sindh, 40.4 percent possessed a working phone that they kept themselves (60.7 percent amongst men); yet only 9.3 percent of respondents stated that they had received any useful humanitarian information in the form of a text message. Worse yet for the humanitarian community, only 0.7 percent of respondents in Sindh received such information via SMS from an organisation – the remaining 8.6 percent receiving it directly from friends. Perhaps due to this low level of use, or perhaps due to external factors, only 5.3 percent of respondents in Sindh recommended SMS as a means for the humanitarian community to distribute information to the population. Not one person amongst the 518 respondents in Punjab, of whom 17.1 percent had a working mobile phone in their possession, recommended SMS as a means to distribute humanitarian information.

By way of contrast, 70.5 percent of respondents in the Punjab received useful humanitarian information through announcements over a mosque's loudspeakers – although that proportion was only 7.5 percent amongst Sindhi respondents – and the only source of information to reach the majority of respondents was “a friend or family member”, at 75.1 percent.

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<sup>23</sup> <http://www.cnn.com/2010/WORLD/asiapcf/08/16/pakistan.floods/index.html?hpt=T2>, accessed 12 June 2011.

It should be stressed that as a non-random survey, these results cannot in statistical terms be generalised to apply to the populations of Sindh or Punjab more broadly, nor even to the flood-affected populations in these areas. Most of the respondents (71.0 percent) were married with children, most (64.9 percent) had received little or no formal education, most had had their homes destroyed (76.4 percent), and almost all (96.9 percent) were displaced by the flooding. However, respondents were also equally spread across the genders, were recruited from eight districts, and represented a considerable socio-economic range across the non-elite population.<sup>24</sup> As such, the survey should be treated as a credible case study into information use amongst the worst affected in humanitarian disasters, and its results should be taken very seriously indeed.

### Implications for Population Engagement

CDAC's survey of information use amongst flood-affected people in Punjab and Sindh provinces showed 27 percent of respondents (249) had access to a working mobile phone that they kept themselves, but only 0.4 percent had received helpful information via SMS from an organisation during the floods. Even considering that only 33 percent of respondents self-identified as literate, there clearly remains a great deal of work to be done.

As this first half of this guide has demonstrated, mobile phones are a widespread technology in Pakistan, even amongst the 'bottom of the pyramid population'. Yet the CDAC study shows that amongst those most in need at a time of great crisis, almost none recommended the use of SMS for receiving humanitarian information. Of course, this finding will owe as much to the preferences of the individuals concerned as to the ways in which the humanitarian sector has used SMS thus far – but the latter should not be dismissed either. The second half of this guide explores how, given that mobile phones are approaching ubiquity of use, organisations working for social good can best use SMS to communicate with, collaborate with and learn from ordinary people.

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<sup>24</sup> The socio-economic range of respondents extended from those who self-identified as 'living in a family in which we had enough to meet our basic needs and a little extra' or 'a lot extra' (24.2 percent together) to those who self-identified as 'living in a family in which we did not have enough to meet our basic needs' (24.5 percent), with the remainder falling between the two.

## **Part Two: SMS Engagement in Pakistan**

## Two Ways are Better than One

### Bottom line:

Two-way communications have the potential to be more effective at achieving influence and behaviour change than one-way communications because they:

- Build understanding of the audience
- Enable near real-time monitoring and evaluation
- Produce locally generated content that can be quoted and re-used
- Build popular trust in the communicator

Two-way communications thus produce better campaigns, designed with reference to advanced understanding of the audience, built-in response to the findings of multi-level monitoring and evaluation, and equipped with a toolset of localised messages.

A communications campaign that solicits responses to its message, and which engages with those responses, is more effective than one that does not, for four reasons:

- 1. Each response provides feedback.** Trends in responses over time and across key audiences enable the communicator to judge effect qualitatively. Is the message reaching the intended audience? Is it understood? Does it resonate with them? The communicator can engage with responses – to clarify, to agree, to find common ground, to persuade by argument – and can adjust the main communications effort to better achieve the desired effect. Such engagement will most often come in the form of responses to observed *trends* in popular feedback.

In the same vein, a repository of responses from the population enables the systematic leverage of such feedback for more formal monitoring and evaluation. The peer-to-peer nature of SMS communications suits network analysis methods, but conventional means of monitoring output and evaluating outcome are also perfectly possible. Receiving continual feedback also prompts the communicator not only to evaluate whether their message is best being communicated, but also whether it is the most effective message to communicate at all.

- 2. Each response builds understanding of the population.** The repeated act of attempting to interpret and understand responses received gradually builds broader understanding of the population. Apparent inconsistencies, unexpected reactions, trending topics – all of these build the communicator's understanding of his or her interlocutors. The result is more effective communications within the campaign cycle, and more effective design of further campaigns.

As with monitoring and evaluation, a repository of responses received can serve as a rich seam for population-centred research, whether data-driven or qualitative. Large volumes of substantive communications coming back from the population can double as qualitative research into the population's opinions and concerns. Understanding generated in this fashion cannot be statistically representative of a population in the manner that a random sample survey can – but it can provide the texture and humanity of response so often lacking in anodyne survey interviews.

Taken together they would provide both anthropologically insightful and statistically reliable understanding.

- 3. Some responses can be recycled as pre-localised messages in their own right.** It is well understood that producing content that is appropriately styled and that chimes with the audience is critical for successful communications. It is also well understood that doing so is easier said than done. Two-way communications provide a ready source of locally produced messages that can resonate better with audiences than 'localised' external messages do, and which, by their very nature, often directly touch upon the communications topic at hand.

It is critical however to avoid an infringement of the audience's trust, privacy and even intellectual property rights. If appropriate, responses should be quoted and cited - 'a resident of Charsadda says...' - both to avoid aggravating audience members, and to emphasise the local origin of the message for greater effect.

- 4. Soliciting responses builds trust.** The act of seeking a response from an individual, and thus implicitly of valuing his or her opinion, is powerful in itself. It builds trust and approval of the communicator. The result is more effective communications. It should also be noted that in certain situations, such as governance extension, building trust in the communicator is also an effective intervention in itself.

Two-way communications thus produces better communicators, equipped with greater qualitative understanding, more locally appealing content, and greater popular trust. Two-way communications also produces better campaigns, designed with reference to advanced understanding of the audience, built in response to the findings of multi-level monitoring and evaluation, and equipped with a toolset of localised messages.

### Implications for Population Engagement

SMS communications campaigns - especially when seeking to effect behavioural change - should:

- solicit responses from their audiences as far as possible,
- leverage those responses to iteratively improve communications through monitoring and evaluation, active interpretive analysis to build understanding of audiences, recycling of selected responses as localised content, and
- store responses in coded repositories - simple .csv format spreadsheets will suit most uses mentioned above.

Two-way campaigns using SMS should not be limited to campaigns that push content *out* through SMS. Widespread adoption of mobile phones means that the population is equipped to respond in real-time to information received over radio, TV, or any other channel. Furthermore, two-way campaigns are of course not limited to SMS as a means of response. Radio call-in shows, letters pages in magazines, discussion forums online, TV chat shows: all present opportunities for two-way communications.

## Broadcasting SMS: Approaches and Tools

### Bottom line:

Two principal routes for broadcasting text messages to the population are open to communicators. Unsolicited texting, often in bulk, reaches large number of respondents, at the cost of low accuracy, low trust and – to emphasise – high irritation to the receiver.

More sophisticated opt-in approaches allow for sustained two-way communication with willing participants. This method should form the mainstay of all SMS communications. FrontlineSMS is the best tool for putting it into practice in most cases, but RapidSMS should also be considered for more complex uses.

Opt-in approaches will achieve the greatest trust and impact when paired with a pre-existing organisation or media outlet – whether a community-based development council, a regional radio station or a local government service.

When sending single text messages to a large number of recipients, one can either broadcast (i.e. one-way, sending only) or broadcast and receive (two-way). Both of these formats allow an individual or organisation to send messages to a number of recipients – and if responses are enabled, for the recipients to reply directly to the sender. Social SMS on the other hand, described in the next section, allows recipients to send messages to other recipients as well – amongst a number of other differences.

Broadcasting text messages on a very large scale is often referred to as ‘bulk messaging’. This has long been favoured by marketing companies because of its wide reach and cost effectiveness relative to traditional marketing techniques. The following two approaches to broadcasting text messages – ‘non-targeted’ and ‘opt-in’ – can both be carried out in bulk.

### Non-Targeted Broadcast SMS

Non-targeted, broadcast SMS is the blanket approach to communications. It is often used for marketing purposes; some companies send messages in bulk to a large number of recipients. Depending on the circumstances, an organisation wishing to broadcast text messages may either work with the telephone companies to send out critical information to the maximum number of people (i.e. disaster warnings, disease outbreak advice), or might buy directories of numbers (illegal in many countries) and send information directly to phone users. The latter, essentially spam, is commonly used in Pakistan by marketing companies. PEPL spoke with an Islamabad-based company that can bulk broadcast SMS messages through their existing cross-carrier contact directories at a rate of 100,000 in 8 hours.<sup>25</sup>

Such practices prompted Pakistan Economy Watch (PEW) to complain of violations of consumer rights. PEW’s protest was, in one instance, reported under the headline ‘Bulk SMS Distressing the Masses’.<sup>26</sup> The authors have experienced for themselves the

<sup>25</sup> Author interview, Islamabad. January, 2011. Interview conducted with a private telephone engineer specialising in short codes, Islamabad.

<sup>26</sup> See for example <http://www.onepakistan.com/news/national/23818-bulk-sms-packages-distressing-masses-says-pew.html>, and <http://propakistani.pk/2009/11/02/bulk-sms-packages-distressing-masses/>, both accessed 14<sup>th</sup> March 2010.

bombardment of spam messages when in Pakistan, and their interlocutors in both Islamabad and the north west have agreed that unsolicited text messages are a source of considerable irritation.

Non-targeted messaging can to some extent be made at least regionally targeted by sending the message to mobile phones whose prefixes align with particular districts and cities of Pakistan. The mobile operators allocate a certain number of SIM cards to each district. For example, PEPL has seen figures (currently not cross verified) that Swat district had been allocated 123,000 cross-carrier SIM cards up until the end of 2010. During a field trip in January 2011 the authors learned that across KP and FATA there is roughly a 70:30 ratio of active to non-active SIM cards out of total allocation of 6,882,000.<sup>27</sup>

The authors were informed that the prefix on the phone numbers of these SIM cards can, for the most part, be identified as belonging to a particular district, even though each different telephone carrier has different prefixes for different areas. To take a hypothetical example, there may be four or five different prefixes for a city like Mingaora, Swat district, and a different set of four or five for the nearby town of Batkhela, Malakand district. If a communicator only wants messages to reach people in Swat then in theory he or she can bulk message the population down to the district level. Of course, this does not take into account those people from Swat who might have travelled to Peshawar or elsewhere and happened to buy a SIM card there, and vice versa. In larger cities the prefixes are more likely to be the same across carriers.

### Opt-in Broadcast SMS

Opt-in broadcast messaging, as the name suggests, means that the receiver of the text message has chosen to be included on its list of recipients. The communicator should only send messages to those that have subscribed to the service. This system often incorporates the use of a short code (see below), to which a phone user will send a text message in order to subscribe. That individual will then most commonly receive messages from the communicator either on an ad hoc basis, or as a fixed number of updates per day or week. The mobile network operators run a multitude of such services, providing paying customers with weather, sport, gossip and news updates, amongst many other categories.

Depending on the platform, opt-in, subscription based messaging can be both a one-way and two-way communications mechanism. For example, a radio station could advertise a short code number on air and send through one message each week reminding listeners to tune in to a particular show, providing details about the show's content. Another radio station could do the same, while also inviting requests from listeners in advance of the next show. When these text messages are read out on air, listeners become part of a connected audience rather than atomised consumers of the station's content.

Short codes for subscription based messaging services are commonly advertised on billboards, radio stations or newspapers. Depending upon the marketing strategy taken, and upon the substantive content delivered, one should assume that the number of subscribers to the service will start small and grow slowly. That slower growth should be considered a trade-off against the increased trust gained through opt-in rather than unsolicited texting. If subscribers are gained through a pre-established and trusted

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<sup>27</sup> Author interview in January, 2011 with a private telephone engineer specialising in short codes, Islamabad.



intermediary, such as a radio station or TV channel, that trust advantage will be noticeably greater still.

A number of tools can perform the tasks required for broadcasting SMS, the most popular two-way option being the open source platform FrontlineSMS, described below. Even with Pakistan's low SMS price, the cost to the sender of regular subscription services can become very high. Some services should consider charging participants for receiving the text, to help cover costs. Such arrangements can be established through the mobile network operators.

### Hybrid Non-Targeted and Opt-In SMS

Non-targeted SMS can quickly become increasingly targeted, opt-in and two-way after an initial campaign. If non-targeted messages are bulk-sent through a platform such as FrontlineSMS, the targeting can be made increasingly refined by subject matter, interest and geography among other fields. For example, a flood relief organisation could broadcast an unsolicited message in bulk to all known phone users in a flood affected district of Sindh province to ask whether they were in need of relief updates. Should a positive response be received, the communicator can in turn ask the recipient to provide their location details. All those who reply 'yes' followed by their location can be grouped together to receive future flood relief messages, in addition to geographically tailored replies as needed.

Each additional piece of information collected by the communicator in this example allows a more thorough segmentation of subscriber phone numbers into different groups, thus allowing more nuanced and useful communications. The communicator can also build up knowledge of which regions are worst affected. The same process could be applied to a wide range of purposes, from incident monitoring during elections to violence mapping during protests. Where there is a need to map particular instances of a trend, FrontlineSMS is often paired up with mapping software such as Ushahidi (see Bottom-Up SMS section below).

#### Implications for Population Engagement

Opt-in, two-way broadcasting of text messages using FrontlineSMS should form the principal component of all SMS campaigns in Pakistan and should be the primary means through which existing campaigns are supplemented with two-way communications functionality.

Untargeted, bulk SMS should be used sparingly, and should be conceived more as a device through which to gain popular attention (much like a billboard or radio advert) rather than a means of communicating substantive content.

## Short Codes

Commercial SMS services are often administered through a short code, generally a three to six digit number that mobile network operators can allocate to a company or institution. For instance, the short code for PakRelief – an Ushahidi deployment in response to the floods of 2010 – was 3441.

For an organisation in Pakistan to establish a short code, the Pakistan Telecommunications Authority (PTA) must award them a licence. The applicant organisation must provide a full description of the short code's intended purpose, in addition to a business plan complete with a detailed profit structure. When the organisation has the licence, only then can it approach the mobile network operators to check the availability of particular numbers.

Each carrier has different numbers available, so the act of establishing a common short code telephone number across all mobile network operators can be a time consuming process. The customer has to approach one of the carriers to assess what numbers are available on its network, choose one of them, and then approach the remaining carriers to see whether that same number is available on their networks. An MOU is needed to agree on the content of the messaging if the communicator wants to send messages across mobile network operators, particularly if bulk messaging. At the time of writing the authors were informed that the PTA had recently banned bulk messaging across multiple carriers through short codes – although some parties seem unfazed.<sup>28</sup>

One of the benefits of using a short code telephone number is that it can be more easily remembered than a long number. In addition, depending upon the nature of the arrangement with the mobile network operator in question, a short code can be guaranteed a certain level of carrying capacity, ensuring that service is not interrupted at times of peak interaction.

Due to the sometimes high cost of using short codes, several companies can often share the same number to drive down costs, meaning that the phone user must write an identifying word so that it can be distinguished from others. This works as follows: a travel agent's advert might read, 'Text 'FLY' followed by your message to 12345.' This message would go to the travel agent, whereas other messages sent to the same number lacking the word 'FLY' would be received by a different company entirely, also using the same number, '12345'. Similarly, if one organisation has sole ownership of a short code it can also use it for a number of different campaigns. For example, the same travel agent could have a different advertisement that reads, 'Text 'Beach'...'. Responses to this advertisement could be routed to a particular department or team-member or server within the larger company.

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<sup>28</sup> Details are presently unclear, but the humanitarian agencies seem to consider the obstruction to be insurmountable, whereas private SMS service providers have indicated that there are ways around the ban. The PTA's decision to shut down the option to mass or bulk SMS means that if a company applied for a short code, it would only be valid for that carrier's users and blocked by all other carriers. One option suggested to the authors was that if different Short Codes are chosen for each carrier but they all send out the same messages, the content will not be considered spam.

## FrontlineSMS and RapidSMS

Of the multiple proprietary and open source packages available for the conduct of broadcast SMS campaigns, FrontlineSMS is the easiest to use, with the most extensive documentation and the most active user community online.<sup>29</sup> It is an open source software product that, together with a laptop and a mobile phone, enables the user to both send and receive text messages with a select group of people wherever there is a mobile phone signal. One of the major benefits of FrontlineSMS is that no Internet connection is needed to use the system. Once the software is installed on a computer, the user attaches a GSM modem with a SIM card and pays the operator's rate per message.<sup>30</sup> Although the software is open source, its use is restricted to the non-profit sector. However, within the non-profit sector it has been used for an extremely wide array of applications.

FrontlineSMS allows the user to send messages to both individuals and groups, depending on user preferences and the intended purpose of the software's application. When the communicator receives responses they can be replied to individually or *en masse*, thus enabling flexibility of application. The software stores all the phone numbers to which the user sends messages, and the numbers from which it receives them, along with the messages themselves. All of this data is saved on the laptop or desktop computer on which FrontlineSMS is being used, rather than on a third party's server or online.

Other free software packages are available that perform similar functions. RapidSMS is the most advanced amongst them, offering extensive functionality for research, logistics and communications in large-scale operations, with the ability to scale for very large flows of data. However, it does require significantly more training to use, and requires considerable software development skills to install and implement. Advanced users and complex organisations – such as UN family organisations, government departments and INGOs – should consider using RapidSMS rather than FrontlineSMS for these reasons. FrontlineSMS is sufficient for most population engagement uses however, and throughout this guide PEPL recommends its use, but it should be understood that RapidSMS can also deliver all of the use-cases mentioned here.

The most up to date version of the FrontlineSMS has interface support for fifteen different languages. No Pakistani languages are presently included. That Arabic is on the list indicates an underlying capacity to support right-to-left text, but there are no immediate indications that support for Urdu or any other Pakistani language is forthcoming in the short term. However, the software's 'translation manager' capability allows users to submit translations of the interface in their own language.<sup>31</sup>

## FrontlineSMS Applications

Because the software is open source, developers are able to take the source code and add their own features. The FrontlineSMS branded family is growing, and now includes FrontlineSMS:Credit, FrontlineSMS:Legal (described below), FrontlineSMS:Learn, and Medic Mobile (formerly FrontlineSMS:Medic). There is also FrontlineForms which allows users of Java enabled phone to fill in basic forms on their mobile phone. The most discussed uses amongst the FrontlineSMS user community for this function are for the coordination of field

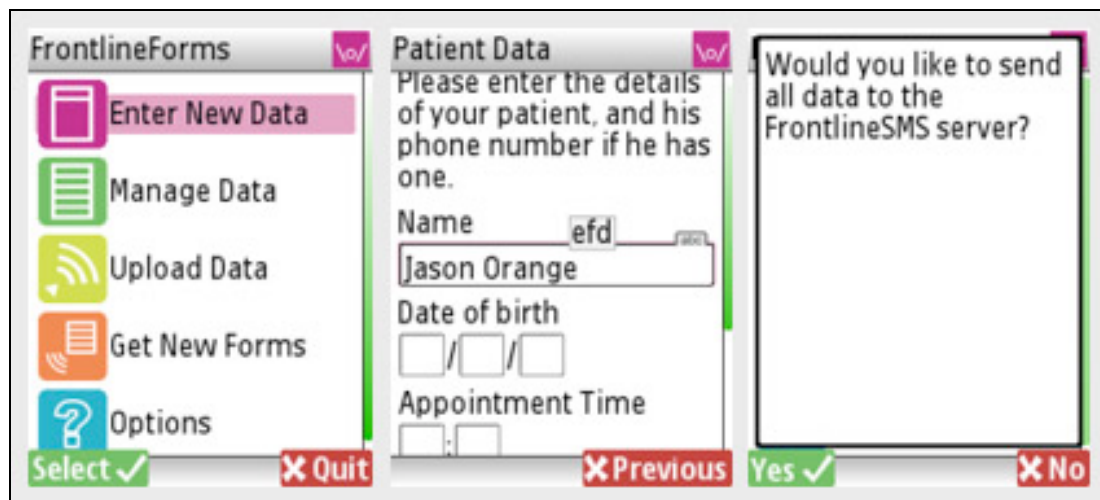
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<sup>29</sup> For documentation, see <http://help.frontlinesms.com/>; for the user community see <http://frontlinesms.ning.com/>

<sup>30</sup> A standard mobile phone can also be used (though not smart phones), but a GSM modem can send around 40 SMS per minute whereas a mobile can only send around 8 SMS per minute.

<sup>31</sup> For language and translation documentation, see <http://help.frontlinesms.com/manuals/1.6.14/translation.htm>

staff and offices, especially with reference to surveys (where the phone replaces the clipboard) and remote management. Rival open source software for these functionalities are EpiSurveyor and RapidSMS, respectively. Each sacrifices some of the accessibility of FrontlineSMS for greater functionality.<sup>32</sup>



Screenshots of FrontlineForms

FrontlineSMS and each of the 'family' products can be applied by any non-profit to their own problem sets. Its common uses include helping farmers to receive accurate market prices, bottom-up election monitoring, and media support for community radio stations among many other applications. Developers have built on top of the core software to create bespoke systems for a great many needs.

### FrontlineSMS:Legal

FrontlineSMS:Legal – or just :Legal, for short – is a version of FrontlineSMS designed for use by both formal and informal legal services. It is intended to help provide legal services to hard-to-reach areas and communities; to improve the efficiency and accuracy of legal administrative processes; and to improve the communications both within legal institutions and externally, with the communities that they serve. It can be put to several uses, but was originally designed to ensure that it could address one particularly pressing need: to help formal legal systems co-operate and connect with community-based dispute resolution mechanisms.<sup>33</sup>

The software can be used to:

- Manage referrals and intake, such as when referring cases from independent dispute resolution services to core legal services, or from rural extension services to urban hubs
- Run client and case management, whether to deliver automated reminders of court dates and appointments, or to maintain digital archives of SMS correspondence

<sup>32</sup> EpiSurveyor is a forms-based survey platform designed by DataDyne, and originally intended for medical purposes but now used for a wide range of survey needs: <http://www.episurveyor.org/user/index>. RapidSMS is an SMS information management and logistics coordination system developed by UNICEF's Innovation and Development Team: <http://www.rapidsms.org/>

<sup>33</sup> <http://legal.frontlinesms.com/>

- Monitor agent caseload and extension into remote areas, and analyse the patterns of case types and responses

As it presently stands, the software requires no extra training above that needed to use FrontlineSMS – which is itself limited. Come the autumn of 2011, a caseload extension will be added to the software that will increase the functionality but will necessitate further training for users.

## Using FrontlineSMS for Population Engagement

FrontlineSMS is a technology. Like other technologies – email, the telephone, the calculator – people and organisations use it in order to be better at the things they already do. One doesn't start doing sums because one has a calculator. FrontlineSMS should be seen first and foremost as a means of solving known problems.

One example from Pakistan is the work of the International Organization for Migration (IOM), which has been taking the lead on the communications response on behalf of the UN cluster system. IOM first used FrontlineSMS in 2009 when responding to the displacement of 3 million people in Pakistan's north west. The problem-set here was clear: the many UN clusters each ran their own means of communicating with the population, and lacked a means for coordination. IOM's Mass Communications Programme used FrontlineSMS to draw on a human network at the village level in the disaster-affected areas to receive updates, confirm information, and disseminate alerts. Information coming in from this network was then collated with findings from across the UN clusters to develop a consolidated communications report.

Zong, a Pakistani mobile network operator, allows IOM to send free informational messages to both those affected by the floods and humanitarian workers. The Mass Communication Programme's team reported on the FrontlineSMS blog that using FrontlineSMS saved over \$15,000 that it would have had to spend on a bulk texting system provided by a commercial supplier.

Users of FrontlineSMS have stated on the website that the software has been employed in Pakistan for the following applications:

- Lobbying to encourage government to ratify arms trade treaty
- Sending thank you notifications to donors
- Spreading public health messages in rural areas
- Disseminating information about disabilities to members
- Communications in research, awareness raising, legal advocacy, crisis intervention, training
- Monitoring civil unrest and providing news updates
- Nurses in rural areas communicating with doctors in the cities
- Sending and receiving messages during community radio programs
- Distributing news of deaths of members to the community
- Raising awareness of a polio campaign<sup>34</sup>

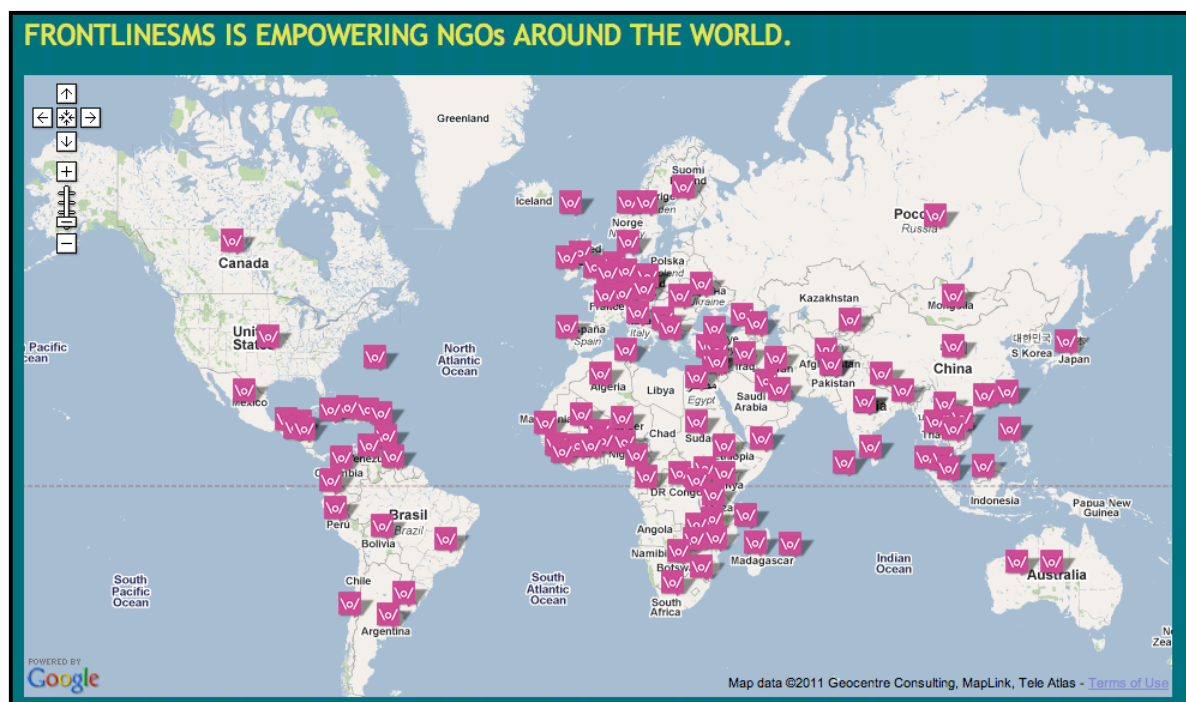
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<sup>34</sup> See <http://www.frontlinesms.com/aboutthesoftware/user-map/>

This list almost certainly doesn't cover the full range of ways in which FrontlineSMS has been employed in Pakistan, yet it already covers a wide range of use-cases, from simple mailing list functionalities to the complex coordination of teams of remote workers.

Elsewhere in the world the software has been used for everything from large-scale public election monitoring to the stock management of drugs in remote rural clinics. Alerts are sent out using FrontlineSMS in response to natural disasters and disease outbreaks, but also for radio programmes and interview appointments. It can be used for a number of services: to transfer mobile phone credit, advertise jobs, share market prices, manage volunteers, and many, many more.

And here are the countries that it's been used in:<sup>35</sup>



Since this guide focuses upon population engagement, here are some ideas for how civil society, the humanitarian sector and the state could use FrontlineSMS to learn from and collaborate with their constituents through two-way communications. The list starts with some simple two-way uses and progresses to more complex institutional builds:

**Tips & questions.** Any programme that seeks to improve the skills and knowledge of ordinary people can use FrontlineSMS to distribute short tips and questions. Participants can send their lessons and advice to the project coordinator, who can learn from those on offer, and distribute the best to the other participants.

**Voting on community development expenditure.** Some community-driven and community-based development models give community members themselves the right to vote on how donor funds should be used in their area. FrontlineSMS could be used to allow community members to vote on spending without having to be present in person.

<sup>35</sup> For an interactive version of this map, see <http://www.frontlinesms.com/aboutthesoftware/user-map/>

**Distributed translation.** Small pieces of text (the length of an SMS) can be sent to participants to be translated from one language into another. The same piece of text can be sent to ten or twenty or fifty people, and phone credit given as a payment to those that have provided a reasonable translation.

**Consultation on local government issues.** Were local government to develop a register of mobile phone numbers, consultation on questions ranging from planning permissions to educational resource allocation could be achieved through SMS exchange with local constituents.

**Crowdsourcing monitoring and evaluation.** Using a register of mobile phones to contact members of the population – or building such a register through the auspices of community-based organisations – donors, INGOs and government can verify whether projects have been executed as planned and reported by their implementers.

**Community radio.** A whole iteration of FrontlineSMS for radio stations is being launched in 2011, entitled FrontlineSMS:Radio. For a summary, watch this video: <http://frontlinesms.ning.com/video/sharath-srinivasan-introduces>. Amongst the uses that FrontlineSMS can be put to are: listener polls, text-in chat shows, advertisements of radio programmes, and distribution of phone credit as prizes.

**Corruption reporting.** The Jhang Model (blogged about on [www.pepl.org.uk](http://www.pepl.org.uk)), developed by Zubair Bhatti when DCO of Jhang District, uses telephony and population engagement to solve low-level corruption. It requires recipients of minor services (such as property registration, vehicle registration, or driver's license applications) to be phoned by a senior government representative – or a third party – and asked whether they had to pay bribes or were in anyway dissatisfied with the service they received. The prompt and reliable action against low-level corruption that results is intended to improve both quality of service and popular trust in the state. Presently implemented by the Punjab Provincial Government across multiple districts, the use of both SMS and automated voice calls is being explored.

There are of course many more ways in which FrontlineSMS could be used for population engagement purposes. This list is just a beginning. PEPL hopes to explore these and other uses with organizations working for social good in Pakistan.

### Implications for Population Engagement

In addition to their utility for direct communications, broadcast SMS techniques can be used to support existing programs in extending their reach and increasing their audience size. If community radio stations or civil society organisations were trained in FrontlineSMS use, for example, they would be able to communicate more effectively with their target audiences. Engaging more directly and increasing participation with constituents or audience members strengthen the impact and reach of peace-building ideas.



### Bottom Line

Cheaper message-for-message than broadcast approaches, more likely to go viral, and inherently bottom-up, social SMS offers opportunities for more citizen-led SMS engagement. The trade-off is increased barriers to entry for some participants. In most situations, social SMS would be best used either for sustained conversation with key contributors, or as a many-to-many complement for broadcast-heavy campaigns.

The most versatile of the services available is Pring, an SMS and online micro-blogging platform, simple enough for any phone user to use, but with extensive bespoke functionality for advanced users such as multiple choice survey questions.

Pakistan boasts no less than three operator-independent platforms for social SMS. That label is used in this guide for two distinct practices: social networking via SMS, and the sending of SMS back and forth within groups of users, or 'group SMS' as it is known.

Whereas with a broadcast SMS mechanism, audience members receive and can respond to messages from a single communicator, within social communication each user is a communicator in their own right, and can directly interact with other users visible to them.

So whereas conventional SMS could be described as closed communication between two users (or one-to-one communication), and whereas broadcast SMS scales that process up to achieve a one-way or two-way communication with a crowd (one-to-many and many-to-one communication respectively), social SMS goes a step further to achieve many-to-many communication. That is, each participant can send a single message to multiple contacts, and can receive messages from multiple contacts, all within a single persistent platform.

For some readers, many-to-many communications might be most familiar in an online context, where they include social networks, mailing lists, micro-blogging and discussion forums – from Facebook to Twitter to Google Groups. Pakistan is notable in having a number of SMS equivalents to such services. Some of the mobile network operators provide social SMS facilities, like Warid's Group SMS and Ufone's SMS Buddies, but this section of the guide will focus on the operator-independent services: Pring, ch0paal, and Humari Awaz.

For the communicator seeking to collaborate with mobile phone users in Pakistan, social SMS provides four major advantages:

- 1. Bottom-up.** The heavy majority of content within a social communications platform is produced by the users themselves, increasing the communicator's understanding of the community, both in terms of the content and style of their messages.
- 2. Viral collaboration.** Viral behaviour in social communications is interactive. Users don't just pass content on to friends: they *collaborate* virally. When a particular joke goes viral, for example, users will riff on it rather than just repeating it, improvising around the joke's structure or features. This can be indicative of actual



engagement with an idea: reproducing an idea requires little effort; reformulating it often reflects a process of internalisation and response. If someone truly understands or believes something, they often don't parrot it: they say it in their own words. It should be remembered though that reformulation is not always constructive, as the above-mentioned addition of a 'Hitler' signature to a viral joke might indicate. Social SMS can allow the original communicator to track the spread and evolution of the message however, and, up to a point, to intervene to adjust its trajectory.

- 3. Pass it on...** Social networks have a latent form of peer pressure built into their fibre. If, on the one hand, three of the ten or so people in a discussion group are talking about something, its members will look into it too. On the other, if a network has hundreds or thousands of members, a topic need only be featured upon a central feed a handful of times to generate interest, quite irrespective of what proportion of members have discussed it. The consequences are the same for persuasion: if a handful of a user's contacts agree upon an idea, that user is more likely to agree as well.
- 4. ... faster:** Normal viral texting requires each individual to manually send messages on to multiple contacts. As discussed above, users in Pakistan incur little expense in so doing, and viral transmission of texts is common. Since social SMS allows each user to send a single message that will reach multiple contacts, viral transmission within the network has the potential to accelerate considerably faster.

Social SMS thus lends itself to bottom-up, interactive campaigns, and can be used by communicators in one of two ways. Either, trusting that enough of their target audience already uses (or can be encouraged to use) one of the platforms profiled below, they can develop a public presence and, much like having a Facebook account, become one of many competing voices in a miniature public sphere. The second method is to create a closed or semi-closed network with the chosen users – much like an email mailing list.

In the first example, communicators should attempt to harness the structure of many-to-many communications to establish and maintain a persistent dialogue with a growing set of users amongst the broader public. As a very simple example, a singer's Twitter account might post the first line of a popular song by the artist, anticipating that its fans would reply with the next. Each reply would make the song echo across the network, alerting more users to the presence of the singer online.

More ambitiously, a soap opera could let its fans decide what should happen in the next episode (Pring ran an SMS soap opera exactly on this model, called 'Zara', that attracted over 30,000 followers), or a foreign language education programme could encourage participants to compete to translate difficult sentences, with a prize for the first to get it right. Such programmes have the added advantage of creating an understanding amongst users that there will be a delay between their input and any response. Unless designed carefully, however, social communications programmes can require intensive, hour-by-hour or even minute-by-minute attention to ensure that the discussion stays on point.

A more challenging drawback to this approach to social SMS is precisely its democratic character. Whereas in broadcast-and-response mechanisms, the broadcaster is privileged as the only voice that can reach the entire network, social communications hands that privilege to all users. Reach into the network is determined by popularity. Each user

competes for attention, the most successful users becoming hubs, linked to hundreds or perhaps thousands of other users.

Consequently, if the message to be communicated is not inherently attractive – or if the related ‘brand’ is badly perceived – then a headfirst dive into public social SMS is not appropriate. But in forcing the rigour of competition upon communicators, it simply replicates the real world. If the message is not attractive to the intended audience, should it not be re-designed?

Perhaps more common a problem would be that a communicator might not want users to have to join a bustling and perhaps intimidating public platform, but does want to embrace the collaborative, creative environment offered by social SMS. In that case, it is possible with each of the tools profiled below to create closed networks, limited only to users chosen for inclusion.

### Implications for Population Engagement

It is recommended that social SMS platforms be used primarily to create semi-closed networks for direct population engagement, anchored around a concrete social institution, such as a radio chat show, a magazine, or a village development council. Uses of the public platforms should not be ruled out, however, and will be increasingly productive as the services grow.

PEPL recommends the use of social SMS in concert with more established institutions for two reasons, over and above broader arguments made earlier in this document in favour of communications partnerships with local media and civil society:

1. Social SMS has higher barriers to entry for the population than broadcast SMS approaches. The latter are to all intents and purposes indistinguishable from ordinary text messages, from the point of view of the user. Social SMS approaches, however, might present users with unfamiliar concepts: ‘following’ another user’s ‘updates’ may not be intuitive to all phone users, by any means.
2. Tying social SMS use to existing institutions enables the development of high-relevance, localised campaigns. Examples could include uses of group SMS to crowdsource localised, quotable content, such as tips, alerts, questions and opinions.

## Pring

It is useful by way of introduction to say that Pring functions like a blend of Facebook and Twitter on mobile phones, but its developers have gone further in leveraging the strengths of SMS than that comparison implies.

Pring is an SMS and online micro-blogging service in Pakistan. It is owned and operated by E-Business (Pvt) Ltd, which is in turn a Panasian Group company, and was launched in April 2009. The SMS service is limited to phones in Pakistan, but online access is international. The developers blog at [blog.pringit.com](http://blog.pringit.com).

Users text or post messages to Pring (via [www.pringit.com](http://www.pringit.com), or by texting a short code phone number). Any other users who have elected to follow that particular user will receive those messages, either as an SMS on their own phone, or through the online platform. Messages can comprise multiple SMS, to a total of 420 characters. This basic functionality is sufficiently accessible that a phone user does not *need* to actively join the network – a step that might be intimidating or off-putting for users who are not tech-confident, but can comfortably use SMS.

Users can encourage their friends to join Pring by sending tailor-made invitations. These do not even need to explicitly refer to Pring. One can, in a limited form, use Pring's functionality amongst one's immediate contacts without engaging with its wider network at all. Only two distinctions between Pring and conventional SMS are apparent to the new user: they would send and receive 'updates' to and from their contacts, rather than one-to-one messages, and they would receive tips from Pring on how to use the service, like 'You and your friend are both friends with XYZ – text 2323 to receive updates from them too'.

As a user builds in capacity and confidence, the system sends him or her incrementally more challenging tips, such as how to block a spam user, or how to retrieve updates from other users about a particular topic. Fully confident users are able to send private messages, search, create personal profiles, alter their account settings, and set up Facebook or Twitter integration. All such interactions are managed using single word English or Urdu commands.

### Advanced functionality

Pring's developers, E-Business, are exploring extended capabilities for the platform, in line with the needs of corporate, government and not-for-profit customers. Indications are that they can adapt many elements of the structure of Pring to suit the needs of a customer. Sample services and advanced functionalities include bespoke messages appended to shorter Pring texts, marked as ads, and the creation of private short code numbers to separate traffic from that of the broader network.

Pring can also be used as a platform to run multiple choice polling, menu-navigated SMS information resources, and even community radio engagement. Using Pring's widgets, a stream of Pring messages can be built into the fabric of other websites, much like RSS feeds, Twitter streams and Facebook activity.

Two options are open to the communicator who does not wish to engage amidst all the hubbub of the public sphere. The first requires one's chosen interlocutors not to be

members of Pring. They can then be invited to follow your updates, and prompted to follow those of a handful of other members of the network. Pring's automated tip system will encourage connections between the members of the group. This approach is likely to be the first port of call for many communicators working with poor, conflict-affected or disaster-affected communities, who may be intimidated by the broader uses and public arena of Pring. However, this approach is also unstable: if one or more users are connected to Pring users beyond the immediate circle, the software will automatically promote connections to the broader network, ending its isolation.

At a cost, one can request Pring's developers to activate a number of privacy settings that create a functionally separate network: a different short code from the public number (subject to operator agreement), customized tips and adverts, and selected users only. Such an approach would produce a stable, private network. E-Business's prices for this service are not available to the authors at present, beyond an understanding that they would be developed according to the client and the scope of work required.

### **Pring and the Mobile Network Operators**

The details of Pring use vary slightly from operator to operator. For Mobilink, Telenor, Ufone and Zong, Pring users are charged PKR 0.50 plus tax to send a message to the platform – which is then distributed for free to all their contacts. Warid users are charged at the normal network rate for sending an SMS. There is no charge for a receiving an SMS on any network. The short code to which users send updates varies from network to network, as follows, but Pring's developers are actively migrating the short codes to 9900 across the networks, in accordance with a PTA request.

<b>Mobile Network Operator</b>	<b>Shortcode for Pring Use</b>
Mobilink	None
Telenor	9900
Ufone	2323 & 9900
Warid	2323 & 9536
Zong	2323

Table 11 – Pring Short Codes across Mobile Network Operators

Mobilink currently works over a long form number. Users pay the operator's usual rate for text messages. At the time of writing, Pring's management team have communicated that they are not presently encouraging uptake of the Mobilink version of the platform, because the long-form number provided would be unable to support the volume of traffic received by the short codes on the other networks. This policy will be reversed once a short code is established for Mobilink. The developers hope that the Mobilink short code will be established by the end of June 2011.

## Pring's Languages and Users

The distinct majority of the text messages written on the platform – some 90 percent according to the Pring development team's statistics – is written in Romanised Urdu. The remainder comprises 5 percent English, and 5 percent other languages. The developers hope that the expansion of the character limit of a message from 160 to 420, achieved in May 2011, will remove barriers for those who want to write in scripts other than the Latin alphabet. Nasta'liq characters, for example, require considerably more space in data terms than Latin characters: only 70 Nasta'liq characters fit into a standard text message, as opposed to 160 Latin characters.

The user base presently stands at 600,000, growing at 4,000 to 5,000 per day. The platform receives more than 300,000 updates from users each day, and sends those same messages out as 3.5 million text messages to the original senders' followers.

The users themselves hail from all over Pakistan, but are predominantly male, between the ages of 18 and 30, and rural. The latter is worth a pause: the style of the platform might appear to be more urban at first glance, but the reverse is actually the case.<sup>36</sup> This does sit uncomfortably however with the discrepancy between the dominance of Romanised Urdu on Pring (around 90 percent) and the proportion of respondents to the aforementioned 2009 Gallup Pakistan poll who sent text messages *and* named Romanised Urdu as their language of choice for SMS: 54 percent. The authors have yet to align the use of Romanised Urdu with one or more demographics, although anecdote and observation (but no conclusive data) point towards an educated and urban preponderance.

In addition to these standard features, Pring provides an Application Programming Interface (API) through which any developer can create additional functionality on top of Pring. One example is a poll application where any Pring user can create and distribute polls. More advanced Pring-apps such as a dictionary and access to Mobile Wikipedia are also in development. The developers of Pring plan to roll out the API to mainstream developers this year.

## Using Pring for Population Engagement

Like FrontlineSMS, Pring is a technology that can be used by organizations to make the work they are already doing count for more. By improving communications internally, and by starting conversations with constituents and participants, organizations working for social good in Pakistan can amplify their impact.

As mentioned above, Pring's particular utility will be for creative or distributed initiatives. Whereas FrontlineSMS allows a communicator to send and receive messages to a large audience, Pring connects that audience up, allowing them to message one another. It thus promotes competition, collaboration and creativity amongst a defined community.

Here are some ways that PEPL thinks Pring could be used for population engagement in Pakistan, starting with simpler ideas and progressing to more complex configurations down the list:

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<sup>36</sup> All statistics and quotations in this section derive from private communication with Pring's management team.

**Slogan design.** Civil society, political parties, and local government could ask their Pring followers to submit ideas for a slogan to advertise an initiative. Not only would such an approach improve the range of ideas considered, but would also allow consideration of how best to design slogans for certain demographics.

**Community bulletin board.** A community organization could run a Pring account as a bulletin board for local residents. Users could both contribute and receive adverts and announcements. With pilot testing, this system could also be used to express community alerts and warnings.

**Real-time discussion for radio and TV.** Closed instances of Pring (or the default configurations of Humari Awaz and ch0paal, described below) could be used to create short-term discussion forums to accompany radio and TV programmes. In an ideal world, Pring could be configured so that audience members could receive one another's updates solely for the duration of the programme, in order to discuss its content.

**Peer-to-peer mentoring.** Many training programmes bring professionals together for a day or a week and then send them back into their workplaces, placing them out of contact with others who are practicing the same skills. Similarly, many large-scale development projects are implemented as multiple, identical local initiatives – such as basic education or post-natal healthcare programmes – with few opportunities for their local managers to exchange ideas, tips and lessons. By encouraging such professionals to follow one another on Pring, they can effectively self-mentor as a group, helping one another implement their skills and improve their work.

**Behavioural research through audience voting.** The Pring developers designed an SMS based soap opera based around the account of a fictional character called 'Zara'. Zara's followers on Pring could vote on what happened next in the story. In a short amount of time the story had 30,000 followers. Using structurally similar campaigns, a communicator could use voting data to analyse social conventions, and could leverage the soap opera itself as an opportunity to seek behaviour change.

## Humari Awaz and ch0paal

These are rival services that enable group use of SMS, much like email mailing lists. Any user can create a group. Users join groups to send text messages to members of that group, and to receive the same. Whereas Pring creates a social network between users, Humari Awaz and ch0paal create spaces for discussion around topics. This mailing list-like functionality allows both Humari Awaz and ch0paal to be used to create simple, small private social SMS groups. Since a user only receives messages from the groups that they join, a communicator can create a group with a selected community, to create a *de facto* closed discussion space. Ch0paal in particular allows the creation of private groups, which only invited users can join.

Humari Awaz (Urdu: 'Our Voice') is accessible across all five networks in Pakistan. Established by US company Mobile Accord – known for their highly successful SMS fundraising campaign in response to the Haiti earthquake – with initial funds from the

US State Department, it was formally launched in October 2009. State Department funds covered the cost of the first 24 million text messages, which lasted until March 2010. Humari Awaz now charges for participation. To send a text message to a group costs PKR 1.00; to receive a message costs PKR 0.40. Both these costs are in addition to the standard charge for an SMS on the user's network. The short code for Humari Awaz is 7111 across all networks. Some commentators, such as the ProPakistani blog, opine that the original US funding for Humari Awaz damaged its credibility, but PEPL was not able to confirm or dismiss this claim during field research. Humari Awaz's lack of a website and a support team have also been criticized.<sup>37</sup>

Ch0paal (also known as SMS-all) has near identical functionality to Humari Awaz, but continues to be free to use. Ch0paal's website, [www.smsall.pk](http://www.smsall.pk), claims at time of writing to have had 2.1 million unique users, and to have processed 3.6 billion text messages. These numbers cannot be confirmed. Ch0paal is accessible across all networks, using the short codes 5566 and 4455, or its longer phone number 0312-4117660-69.

Sample groups relevant to population engagement already active on ch0paal include one requesting blood donations, another sharing Pashto poetry, and several exchanging tips about learning English. It should be pointed out though that membership of such groups identified by PEPL so far rarely exceeds 150 users. Groups such as 'Islam', 'Cooking', 'SexChat' and 'Boys' all have memberships in the hundreds. 'Girls', 'Cricket', 'SMS2009' and 'Jokes', however, all have more than 1000 members, the latter reaching 9,261 members.

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<sup>37</sup> <http://propakistani.pk/2010/03/06/hamari-awaz/>, accessed March 14<sup>th</sup> 2011.

## Bottom-up SMS Applications

### Bottom Line

Two principal means exist for using SMS to crowdsource contributions and opinions from the population independent of a two-way communications process. These means are collaborative mapping and online citizen journalism.

Both activities produce a primarily online output. If information contributed to these online platforms can be fed back to the population through channels more accessible to the population than the Internet, they could come to advance bottom-up understanding of the population. Online citizen journalism platforms that provide content to co-owned radio and TV stations are successful examples of such integrations of bottom-up and top-down mechanisms to form two-way communications loops.

A great deal of media attention upon SMS innovation has, in the last year in particular, focussed upon Ushahidi – a crowdsourcing platform that utilises SMS to yield mappable data about unfolding scenarios – and upon other, related, bottom-up initiatives like Open Street Map and Sahana. Less vaunted, but no less revolutionary, are SMS-based citizen journalism platforms.

From the perspective of humanitarian communications in particular, there is quite some potential for leverage of these networks for information-gathering purposes, since they are geared to encourage individuals to contribute information to a central platform. Opportunities for behavioural change efforts are more limited however, since these services do not in their default configurations provide information back to the population. They can conceivably serve as the response mechanism for a cross-platform, top-down communications campaign, however. Here we discuss two major bottom-up SMS initiatives: Ushahidi and citizen journalism.

### Ushahidi

First launched in Kenya to monitor election violence in 2008, Ushahidi is Swahili for ‘testimony’. The platform is a means for mapping information provided online and via SMS about unfolding events. A free and open source technology, Ushahidi has most famously been used for coordinating humanitarian response to natural disasters – its use during the Haiti earthquake has vigorously challenged the received wisdom of humanitarian information management – but has also been leveraged for unexploded ordinance tracking, crime mapping, and round upon round of election monitoring worldwide.

An Ushahidi instance was deployed to crowd-source information about the 2010 floods in Pakistan. Hosted at [www.pakreport.org](http://www.pakreport.org), it achieved a comparatively low number of reports during the emergency itself. One explanation might be that low Internet penetration amongst the populations worst affected by the floods reduced the apparent relevance to them of contributing information for online output.

In that sense, Ushahidi is perhaps best used for equipping external actors with granular information about on-ground conditions. Essentially a map-based visualisation of text



messages received through FrontlineSMS or a similar tool, Ushahidi provides little population-facing communications functionality where access to the Internet is limited.

Ushahidi could be used to visualise geographically and over time SMS content received as part of a two-way communications programme. The actual mapping process is labour-intensive, however, relying upon human effort to assign a precise location to each text message. Online mapping applications like Map Box and GeoCommons would be more appropriate vehicles, unless the campaign were to garner sufficient public enthusiasm amongst Internet-capable demographics, such as students.<sup>38</sup>

## Citizen Journalism

The principal citizen journalism platform with an SMS component in Pakistan is See N Report ([seenreport.com](http://seenreport.com)), a website founded in 2008 in the wake of the Long March protests. See N Report is a bottom-up, multimedia news platform to which individuals can make contributions via SMS, MMS, email or phone call. Several spin-off platforms founded by Pakistani media organisations exist, built upon commercial versions of the same underlying software. Notable amongst these are platforms owned by GeoDost, Samaa TV and Aaj. Unlike PakReport, these citizen journalism services saw very significant popular contributions during the 2010 floods, achieving more than 10,000 news reports on the topic.<sup>39</sup> Although online in their output, the three commercially owned services are integrated with the mainstream media functions of their respective companies, and thus present more concrete incentives for contribution: messages sent in might appear on TV, for example. It is not unreasonable to consider these particular platforms to be better described as two-way rather than bottom-up as a result.

These platforms do provide direct access to the opinions and concerns of ordinary Pakistanis. Although See N Report itself appears to publish a low volume of reports, the other platforms are active, GeoDost for one claiming to have received 3,882 reports in the past 30 days at time of writing.<sup>40</sup> The research potential for such platforms is clear, but extensive study should first be made of their user base to reveal the limits for research.

## Implications for Population Engagement

Purely bottom-up applications such as Ushahidi and See N Report have many uses across the information management sphere. Insofar as this report concerns the particular effort of population engagement in Pakistan, their uses are more limited, given that they primarily produce an online output.

Where an online, public-facing portal for concentrating popular participation in a programme is required, as part of a broader two-way communications effort, both Ushahidi and See N Report in particular should be considered seriously. Equally, where the online content can be harnessed and recycled into other communications channels, these bottom-up techniques could be of considerable and important use.

<sup>38</sup> <http://mapbox.com/#/>, <http://geocommons.com/>

<sup>39</sup> <http://www.mobileactive.org/case-studies/if-you-build-it-they-will-come-seenreport-and-mobile-citizen-journalism-pakistan>, accessed 17th 2011.

<sup>40</sup> <http://www.geodost.tv/>, accessed 7<sup>th</sup> June 2011.