Utilising Mobile Phones for Development in PNG
Lessons Learnt and Guiding Principles
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Executive Summary

The ‘Utilising Mobile Phones for Development in PNG study’ has consisted of three pilot research projects conducted in Papua New Guinea (PNG) in 2012-2013. These three projects have been run simultaneously in order to synthesise lessons learnt in a coherent manner. The cross-sectoral lessons learnt from the three research projects are:

1. People do own or have access to mobile phones.
2. Voice calls and text messaging (SMS) work well in the PNG context.
3. Recharging of mobile phone handset batteries remains a challenge.
4. Phone numbers change.
5. Remote training can be facilitated using phones.
6. Remote research can be facilitated using phones.
7. Stakeholder engagement is crucial.
8. Stakeholder consultation is essential.
9. Text messages need to be written so as to be clear and concise.
10. Prank calls can be received by free-call numbers.
11. Coaching can be helpful for people answering phone calls.
12. Where they are available, networked computer databases offer a user-friendly system for entering data.

From these lessons learnt, guiding principles about how best to utilise mobile phones in development efforts have been developed. It is intended that the guiding principles would be useful for any organisation or individual considering the introduction of mobile phones in service delivery in PNG or in a similar context. The guiding principles are:

1. Distribution of mobile phones is not recommended.
2. Simple is best.
3. Design should be appropriate to the PNG context.
4. Consider other valuable, relevant and accessible mediums.
5. Stakeholder participation is vital.
6. Rigorous research is constructive and highly recommended.
7. Use of mobile phones in development offers rewards in terms of cost-effectiveness and time-efficiency.
**Background and document purpose**

The majority of the citizens of Papua New Guinea (PNG) reside in rural areas¹. Up until 2007, most people lived without access to any kind of phone, as there were typically no landline phones or public phones outside of urban centres. The government telecommunication provider, Telikom PNG, held a monopoly and provided only limited mobile phone coverage in some major towns and cities². The Independent Consumer and Competition Commission granted two additional mobile spectrum licences, which commenced on July 1 2007³.

Since the introduction of competition, there has been unprecedented expansion of mobile phone network coverage into rural areas⁴, with reception reaching the most remote localities. This expansion has been greeted with much enthusiasm by many people, particularly due to a greatly enhanced ability to have social contact with family members spread throughout PNG⁵. Some negative concerns were expressed at the time of the service commencing, particularly associated with affordability and changes in social roles, communication patterns and relationships⁶. Nonetheless, coverage and usage have continued to expand. Increased access to telephony has also created an opportunity to explore how mobile phones may be able to assist in service delivery. There are currently three mobile phone operators in PNG: Digicel PNG, bemobile and Citifon (a subsidiary of Telikom PNG).

The ‘Utilising Mobile Phones for Development in PNG study’ has consisted of three pilot research projects conducted during 2012-2013. These three ‘mobile phone for development’ (M4D) pilot projects have been run simultaneously in order to synthesise lessons learnt in a coherent manner. This document outlines cross-sectoral lessons learnt from the three research projects. Guiding principles about how best to utilise mobile phones in development efforts will also be presented.

It is intended that the document would be useful for any organisation or individual considering the introduction of mobile phones in service delivery in PNG or in similar developing country contexts. Readers who might find the guiding principles useful would include public servants and officers with non-government organisations or development programs, particularly those working in areas such as program design, communication strategy, monitoring and evaluation, or community engagement.

The study has been conducted with funding from the Australian Government, in order to support the Government of PNG in its desire to explore potential use of mobile phones in service delivery and development efforts in PNG. All three pilot projects have now been completed and show very pleasing results, leading to a strong indication that strategic use of mobile phones can aid service delivery in PNG.

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² Watson 2011a, p. 171; Cave 2012, p. 9.
The Childbirth Emergency Phone project involved the establishment of a free-call phone number for rural health workers to phone when patients experience childbirth complications. Research findings indicated that the project led to improved communication and beneficial health outcomes for patients\(^7\). The pilot project in Milne Bay Province was handed over to the Milne Bay Provincial Health Authority in celebratory ceremonies in both Alotau and Port Moresby in October 2013. The local authority is continuing to support the program and pay the phone bills, which is a positive outcome for health workers, women and families throughout that province.

This research project has determined that two-way communication through voice calls can assist in health service delivery. Rural health workers use mobile phones to consult with staff in the labour ward of Alotau Provincial Hospital who give real-time advice during time-critical medical emergencies, particularly birthing complications (see Figure 1). In such cases, “improving direct communication to a referral obstetrician can make a difference\(^8\) with respect to the number of women dying during labour.

![Figure 1: Childbirth Emergency Phone diagram](image)

A free-call number has been established, with a designated ‘emergency’ handset installed in the hospital labour ward. Rural health workers can phone in at no cost at any hour to this number, and labour ward staff such as midwives answer the ‘emergency phone’. A second phone in the labour ward is available for outgoing calls, for example to a specialist if required. Rural health workers can use any mobile phone, including their own personal phones, to call the toll-free line. Rural health centres have also been issued with solar panels for charging mobile phone batteries. Both the Phase 1 report\(^9\) and the Phase 2 report\(^10\) are available.

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\(^7\) Watson and Sabumei 2013b.
\(^8\) Kirby 2011, p. 59.
\(^9\) Watson and Sabumei 2013a.
\(^10\) Watson and Sabumei 2013b.
Trial Project in Law and Justice: Village Courts Data

A trial project to collect data utilising mobile phone text messaging has been completed in the law and justice sector in partnership with two government agencies: the Village Courts & Land Mediation Secretariat and Magisterial Services. The aim of this trial was to determine if data collection via mobile phone is more effective than other data collection methods, such as asking officers to post or fax paper forms. The trial involved the electronic submission of data related to Village Courts using mobile phone text messaging (see Figure 2).

![Figure 2: Village Courts Data diagram](image)

The data collected was about cases referred to District Courts by Village Courts. In 2011, all District Courts were asked to return completed paper forms on relevant cases from a two-month period. Only one District Court returned data. In 2013, useful data was collected using text messaging from 35 District Courts around PNG\(^{11}\). Thus, the trial has shown that data collection through text messaging can be valuable, speedy and cost-effective in accessing data from around PNG.

The analysis has found that data collection through mobile phone text messaging is a useful tool in the PNG context. The project suggests that the use of mobile phones could prove very useful, time-efficient and cost-effective in evaluations and reviews requiring complex data collection, good sample size(s), and valid information. There is strong potential for this methodology to reach remote and previously excluded participants. In any sector, more effective data collection could create a strong evidence base and therefore lead to beneficial policy creation. The project report is available\(^{12}\).

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\(^{11}\) Watson and Morgan 2013.

\(^{12}\) Watson and Morgan 2013.
**Trial Project in Education: SMS Story**

The SMS Story project was designed and implemented by the Voluntary Services Overseas (VSO) Education Program. The trial involved sending daily mobile phone text messages to teachers in rural elementary schools (Grades 1 and 2) using a free, open source software program called Frontline SMS. Text messages contained lesson plans and short stories that teachers wrote on the blackboard and used in other classroom learning activities (see Figure 3).

**Figure 3: SMS Story diagram**

The trial was a controlled trial, in which half of the teachers involved received text messages and half did not. In term 1 of 2013, the reading ability of nearly 2500 students was assessed in elementary schools in Madang Province and Simbu Province. During term 2 and term 3, a text message service was offered to teachers in half of those schools. An end-point reading assessment was conducted in term 4 to determine if the text messages for teachers had any impact on students' reading ability.

Students whose teachers received the text messages improved more in the reading test than students whose teachers did not receive the text messages. It was found, using statistical testing, that the reading ability of children in the active group (in which teachers received text messages) was significantly higher than the reading ability of children in the control group (in which teachers did not receive the text messages)\(^\text{13}\). Thus, it can be said that a daily mobile phone text message to elementary school teachers in PNG boosted students' reading ability.

The success of SMS Story signifies the value of using mobile telephones to support rural-based workers throughout PNG, and in particular teachers in remote schools\(^\text{14}\). The project report is available\(^\text{15}\).

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\(^{13}\) Kaleebu, Gee, Jones, Jauk and Watson 2013.

\(^{14}\) For more details on the education system in PNG and particularly the challenges faced by remote schools, see Trucano 2014.

\(^{15}\) Kaleebu, Gee, Jones, Jauk and Watson 2013.
Cross-sectoral lessons learnt

Overall, the ‘Utilising Mobile Phones for Development in PNG study’ has indicated the potential for mobile phones to effect positive change in PNG. The value of having conducted three research projects across different sectors is that evidence is now available to inform policy deliberations.

This section of the document will outline lessons learnt from the three concurrent projects, with an emphasis on those lessons that can be applied across sectors. Each lesson learnt will be discussed in general terms and then in relation to the three projects, as applicable. Material referring to the health project is highlighted in green, reference to the law and justice sector project is not highlighted and material regarding SMS Story is highlighted in pink.

1. People do own or have access to mobile phones. This has been true in all three projects implemented, meaning that rural-based workers do use mobile phones.

   During fieldwork for the Childbirth Emergency Phone project, it was found that most health workers owned mobile phones. In the SMS data collection project in the law and justice sector, all of the 39 participating clerks owned or had access to a mobile phone. One clerk who was approached was unable to participate in the trial due to not owning or having access to a mobile phone. Another clerk was unable to participate as there was no second phone available for training purposes (training involved speaking on one phone with a trainer while sending and receiving text messages on another phone).

   In SMS Story, it was found that many teachers in rural elementary schools own or use mobile phones. Baseline data revealed that 91.9% of the teachers in the study owned mobile phones. The technology has also been used by many teachers for some time: the mean length of time that teachers had owned a mobile phone was 2.7 years.

2. Voice calls and text messaging (SMS) work well in the PNG context. Complex technical literacy is not required to be able to receive phone calls, make phone calls, receive text messages or send text messages. Voice calls and text messaging can be undertaken with any phone handset, meaning that specialist handsets or specific types of phones are not required.

   Data on handset types was not collected in the Childbirth Emergency Phone project. In the law and justice sector, over a third of participating clerks possessed basic phones with limited functionality, nearly half of the clerks had an advanced phone (that is, one that included a camera), while just a very small number owned smartphones with Internet access. In SMS Story, 70.5% of the teachers in the trial reported having a basic phone, while 23.8% had advanced phones and 5.7% owned smartphones.

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17 Watson and Morgan 2013, p. 10.
18 Watson and Morgan 2013, pp. 8-9.
20 Kaleebu, Gee, Jones, Jauk and Watson 2013, p. 4.
21 Kaleebu, Gee, Jones, Jauk and Watson 2013, p. 4.
22 Watson and Morgan 2013, p. 10.
23 Kaleebu, Gee, Jones, Jauk and Watson 2013, p. 67.
3. Recharging of mobile phone handset batteries remains a challenge in locations without mains electricity supply. This problem was identified in previous research undertaken in rural areas of PNG and it has been evident in the three research trials. Solar chargers were provided to rural health facilities throughout Milne Bay Province in order to ensure that health workers can keep their handset batteries charged and ready to be used during childbirth emergencies. Out of 30 rural health workers interviewed, 10 mentioned they were very happy with the project distributing solar mobile phone chargers, saying it has solved their problem of charging their mobile phone batteries. Having a fully charged mobile phone at hand saves time during emergencies.

In the case of the SMS data collection project, most participating clerks said they have access to mains electricity supply either at the courthouse or at home (32 out of 39 participating clerks); of the remainder, two charge their batteries using a diesel generator at home and five clerks regularly pay to charge their phone battery at a trade store. The challenge of recharging mobile phone batteries did not appear to be a noteworthy obstacle to participation in the SMS data collection trial. During nine in-depth research interviews conducted with participating clerks, only one mentioned battery recharging as a concern, particularly during regularly occurring, extended power outages.

In relation to SMS Story, the only expense mentioned by teachers involved in the project was in relation to making sure that their phone batteries remained charged. Around half of the teachers surveyed identified mobile phone charging as a cost incurred while participating in the project (53%; n=44). Of those teachers who paid to recharge their batteries, they spent on average two kina per recharge. This was the only cost attached to using the SMS Story service, and had no apparent impact on the levels of participation among teachers.

4. Phone numbers change. In PNG, people’s phone numbers change quite often, due to handsets being lost, stolen, broken, given away or inadvertently locked. All projects which require listings of participating phone numbers must devise and include strategies to deal with this issue.

In the case of the Childbirth Emergency Phone, this challenge did not apply as access to the emergency phone number was not restricted to a list of incoming phone numbers. Rural health workers were able to phone from any phone. This was beneficial as it was envisaged that if a health worker’s mobile phone ran out of battery power, they could use another handset (for example, a handset belonging to a patient’s family member) to phone the emergency number again.

In training conducted with participating clerks at the outset of the SMS data collection project, clerks were encouraged to note down the project contact phone number on a

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24 Watson 2013.
25 Watson and Sabumei 2013b, p. 26 (in total there were 44 interviews, 30 of which were with rural health workers).
26 Watson and Morgan 2013, p. 12.
27 Data from interview transcripts (this was not mentioned in Watson and Morgan 2013).
29 Kaleebu, Gee, Jones, Jauk and Watson 2013, p. 31 (the report says two kina per week, but it is likely that the question and answer referred to the cost per recharge).
piece of paper and pin it to their office wall. Clerks were repeatedly asked to contact the project phone number in the event of a phone number change. Some clerks did do so during the project life, while others did not (this information was ascertained by contacting the person through an office number or the phone number of a colleague). During the life of the SMS Story project, some teachers contacted the contact phone number, usually by text message, to notify of a phone number change. The project team felt that generally teachers were keen to notify them of a phone number change as they did not want to miss out on receipt of stories and lesson plans via SMS.

5. It is possible to conduct training remotely, through the use of telephony. A user-friendly, question-and-answer approach can be implemented with over-the-phone training, thus mitigating the need for target group members to undertake costly travel to attend face-to-face training. The Childbirth Emergency Phone project allowed individual capabilities of health workers to improve, as phone calls involved not only service delivery, but also informal, on-the-job training for participating staff at both ends of the communication chain. Remote training was a key component of the data collection project in the law and justice sector. The trial was testing the effectiveness of remotely collecting data from isolated and dispersed locations. Therefore, the methodology of conducting training over-the-phone, rather than asking clerks to travel to attend face-to-face training was an appropriate technique to employ. Before the commencement of the two-month-long data collection period, clerks were contacted by phone and invited to participate in one-on-one, over-the-phone training. The script used during the training is available and commenced with an explanation of the project and its purpose. This was followed by a session in which the trainee sent and received text messages, with guiding prompts, instructions and questions being provided by the trainer verbally. In many cases, the latter session occurred during a second phone call, at a convenient time designated by the trainee. This session was followed by an informed consent process and the collection of useful data about the trainee, such as demographic information and additional contact details for a colleague, in the event of a mobile phone number not being serviceable. The over-the-phone training included repetition of key information and also allowed repeated opportunities for participants to ask questions. Over-the-phone training took longer than anticipated as some clerks were unavailable or unreachable when first contacted. Compared to other data collection methods, there was a high rate of return during the SMS data collection project: 35 out of 39 trained clerks returned useful data. This shows that the remote training worked and is a methodology worth attempting in other projects. In addition, during the data collection period, weekly reminder text messages proved to be an effective way to prompt recipients to send in information. In the case of SMS Story, teachers participating in the trial received a cartoon poster explaining how to use the daily text messages. They did not receive any in-service training, aside from an explanation about how to use the poster. The first text message

31 Watson and Sabumei 2013b, p. 32.
each school day included a short story. The second text message on each school day contained a lesson plan. Thus, the first message increased the amount of available reading resources in each school, while the second message was a training component of the trial. Given the success of the trial in improving students’ reading ability, it is possible to suggest that the series of lesson plan text messages provided an effective and useful training sequence for participating teachers. Teachers reported an increase in the implementation of teaching strategies appropriate to teaching reading34. The daily messages served as frequent reminders, encouraging the teachers to teach reading. Importantly, SMS Story did not require any teacher to be absent from a class for training.

6. It is possible to conduct research remotely, through the use of telephony. In research, phone interviews can be valuable, cost-effective and time-efficient. The telephone interview technique has challenges associated with it, but it creates opportunities to reach otherwise excluded populations and it saves both time and travel costs. The CallSafe application can be used on a Samsung Galaxy S2 or S3 to record phone calls. Alternatively, a simple tick-sheet or a spreadsheet can be used35. As in all research, the writing of questions is crucial, to ensure that relevant and useful information is collected.

Phone interviews were not used in the health project.
In the SMS data collection project, phone interviews were used to good effect. Semi-structured interviews were conducted with selected clerks during the trial. These interviews aimed to gain feedback, experiences and other qualitative data. The audio of these interviews was recorded using CallSafe software, by Electrodata. The calls were made with a Samsung Galaxy S3 phone as this is the required platform to run the CallSafe software. Interviews were later transcribed and then reviewed by searching for key themes. An advantage of recording phone call audio is that exact wording of quotes can be transcribed and utilised in reporting36.

In SMS Story, phone interviews with teachers several weeks into the trial resulted in a change to the timing of outgoing messages, based on the feedback received37. Phone interviews are a valuable way to ascertain the views of text message recipients.

7. Stakeholder engagement is crucial. Without the interest and support of relevant government authorities at both national and local levels, the three research projects would not have been able to proceed. It is important that researchers and project implementers allow time and resources for events such as project launches, mid-point reviews and final presentations of results and certificates. Local events in provinces should be held shortly before events held in Port Moresby.

In the health project, events were held in Alotau before similar events were held in Port Moresby within the following week.
In the SMS data collection project in the law and

34 Kaleebu, Gee, Jones, Jauk and Watson 2013, p. 60.
35 A research project in the education sector in PNG employed the telephone interview technique to collect quantitative data from respondents around the country: see Manikuali, Neofa, Wape, Debenham and Maybanks 2014, Appendix 2.
justice sector, a steering committee was formed so that key officers from the two
government agencies involved could participate. Committee meetings were held at
alternate offices, with the role of meeting chair also alternating.
For SMS Story, a project advisory group was established. Group members included
representatives from relevant agencies within the Department of Education, as well as
provincial representatives and other key stakeholders.

8. Stakeholder consultation is essential and should begin early in the project scoping and
design phases. In all three projects, it was very important to understand stakeholder
concerns and processes.
In the health project, early consultation with the management and staff at Alotau
Provincial Hospital established that the existing protocol restricted advisory roles to
medical officers. Therefore, establishing authorisation for labour ward staff to give
advice over the phone was a crucial early step in the process of establishing the phone
line.
In the SMS data collection project, stakeholder consultation was a vital part of
designing and writing the SMS questions. Wide consultation during the writing process
ensured that questions collected the required data and included appropriate options for
responses. Questions were then tested with members of the target group from three
diverse provinces before being finalised.
For SMS Story, stakeholder consultation took place with national agencies and also
provincial authorities.

9. Text messages need to be written so as to be clear and concise.
Text messages were not used in the health project.
In the SMS data collection project, SMS questions were written clearly. The text
messages were also tested with a small group of clerks, to ensure their clarity.
Correct grammar, spelling and punctuation were used in the SMS Story text messages
to ensure that teachers were teaching reading correctly. Detailed experiences relating
to text messaging in the PNG context are outlined in the SMS Story project report.

10. Prank calls can be received by free-call numbers. Prank calls are to be expected and
planned for. Prank calls to a free-call number can be limited by only disseminating a
free-call phone number to the intended target group.
In the case of the Childbirth Emergency Phone, announcements about the project were
aired on the local radio station. Announcements were addressed to health workers and
included reference to the free-call phone number. Public broadcasting of the phone
number led to certain individuals making prank calls to the free-call number. The exact
number of prank calls received is unclear, but there was certainly a spate of such calls
around the time when radio announcements aired. At other times, there were no prank
calls. Prank calls were irritating for labour ward staff, particularly if they were attending
to patients at the time of the call.
The prank calls ceased following implementation of three strategies: staff at the local
radio station were asked to avoid publicising the phone number; a message from the
head of the local health authority was broadcast on the local radio station appealing to
people not to call the number unnecessarily; and labour ward staff asked callers to
think about how it might feel if their wife, mother, sister or daughter was in pain due to
delays caused by unnecessary calls. Such strategies could be employed again from
time to time as the need arises.
An important lesson is to avoid broadcasting a phone number to the public in any way,

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38 The SMS questions are available at: Watson and Morgan 2013, pp. 35-36.
39 A booklet containing the SMS stories and lesson plans is available upon request. In this case, text messages were
written in the English language. However, projects could include text messaging in any language, including Tok Pisin
and Motu.
40 Kaleebu, Gee, Jones, Jauk and Watson 2013, pp. 63-65.
including through radio broadcasting or publicly available printed materials. It is imperative in projects of this nature to ensure that phone number access is limited to the target group. If appropriate, target group members could be asked to keep the phone number confidential. Unfortunately, for phone numbers which are available to the public, it is expected that prank calls would be received. If a phone line is to be available to the public, strategies to address anticipated prank calls should be developed during design and implementation. The other two projects did not include free-call numbers.

11. When establishing a phone line, it is valuable to provide coaching for the people likely to be answering phone calls. The coaching can include practice phone calls (also known as ‘role play’ calls). It may also be necessary to secure authorisation for officers to be able to respond to calls as needed. Forms or scripts for officers to use when handling calls should be kept simple, uncluttered and easy-to-use. At the outset of the Childbirth Emergency Phone project, coaching was provided to labour ward staff. The coaching included opportunity to role play phone calls of likely scenarios. An important process of stakeholder engagement took place, with health managers in the host province giving authorisation for labour ward staff members to be able to give advice during phone calls. This was a change of protocol and was a vital precursor to implementation of the project. During the project, labour ward staff requested the simplification of the form used for handling calls. The new, preferred form is visually uncluttered and therefore less challenging for staff members to complete during phone calls. The two versions of the form can be found as appendices of the Phase 1 report. The other two projects did not include free-call numbers.

12. Where they are available, networked computer databases offer a user-friendly system for entering data. In the health project, this finding is not relevant. In the SMS data collection project, clerks at District Courts which have networked computer databases indicated that they prefer to use this system and find it easy to use. The system has drop-down menus in fields (boxes) on computer screens. Once data is entered, it is transmitted to Port Moresby. For clerks without access to a networked computer database, SMS was the preferred method for providing data. The two systems can be used in partnership, with SMS data linked to computer databases for places that do not have access to computer networks. In the context of the remote schools involved in SMS Story, this finding is not relevant.

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41 Watson and Sabumei 2013a, pp. 38-43.
42 Pact 2014, p. 43; RapidSMS 2013.
Guiding principles for M4D in PNG

Based on the lessons learnt from the three trial projects, as well as drawing on information from other relevant sources, outlined here is a list of guiding principles about how best to utilise mobile phones in development efforts in PNG.

1. Distribution of mobile phones is not recommended. Rural-based workers own or have access to mobile phones. Many other community members also own or have access to mobile phones. In another listing, a similar sentiment has been expressed: technology distribution is a “simplistic approach [and] is often at the root of failure of many educational technology initiatives.” If handsets are to be handed out during a project, consider issues of theft, damage, loss, other uses of phones, social pressure to give handsets to relatives, and so on.

2. Simple is best. If something can be done with simple technology, avoid introducing a more complex, advanced technology. Similarly, a key principle in another similar list is: “The best technology is the one you already have, know how to use, and can afford.”
   a) Voice calls and text messaging (SMS) work well in the PNG context.
   b) Text messages can be effective in several ways, including in supporting rural-based workers, in sending out materials/resources, as a training mechanism and as a data collection tool. Another trial also found text message reminders to be feasible in the PNG context.
   c) Text messages can be sent and received using any handset. A project involving text messaging does not require participants to use a particular type, brand or make of mobile phone.
   d) Text messages need to be written so as to be clear and concise. Text messages are limited to 160 characters, including spaces. In PNG, longer messages may not reach the recipient in a complete form.
   e) When planning to use text messages, the functional literacy rates of intended recipients may be worth considering, depending on the target group. In most communities, there are some people who are able to read.
   f) There are various options for open source software or service providers that can assist in setting up or managing SMS services. Details of software options and service providers can be obtained from the author upon request.

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43 Trucano 2010, no page.
44 Trucano 2013, no page.
45 Kurumop et al. 2013.
46 Adult functional literacy rates in PNG are low (Ambang 2012, p. 90; ASPBAE Australia Ltd and PNG Education Advocacy Network 2011; Department of National Planning and Monitoring 2010, p. 54; RTI International 2011).
47 Sharing of text message content may not be appropriate if the material is confidential or of a private nature.
3. Design should be appropriate to the PNG context.
   a) Keep it free or very cheap for users. While rural-based workers do have access to or own mobile phones, costly services are unlikely to be affordable for these people and therefore will not be utilised. It is possible to establish free-call phone lines or free text messaging services. If frequent communication between a very limited group of phone numbers is anticipated, a Closed User Group may be a suitable option.
   b) Consider the user experience. User-friendly functionality that meets people’s needs will be embraced with enthusiasm.
   c) Recharging of mobile phone handset batteries can be a problem in rural areas of PNG where there is no electricity supply or where access to electricity is limited or intermittent. The provision of solar mobile phone chargers has been found to be a successful method of ensuring phone batteries can remain charged. Solar chargers are relatively inexpensive and can be sourced within PNG.
   d) In the PNG context, phone numbers frequently change. It is important in project planning to think about the impact of people’s phone numbers changing, due to handsets being lost, stolen, broken, given away or locked. Participants can be encouraged to keep a contact phone number in a safe location, rather than only saved in the contacts list in their mobile phone. Participants can also be encouraged to contact the project phone number in the event of a problem with a mobile phone. However, not all participants may think to notify of a change in phone number. Therefore, projects should collect alternate contact details for work colleagues, spouses or other people, as appropriate.

4. Consider other valuable, relevant and accessible mediums. There are still some places without mobile phone reception. Not all communities in PNG fall within mobile network coverage areas. Nonetheless, mobile telephony can assist in service delivery in strategic ways, particularly for many rural communities.
   a) In addition to SMS and voice calls using mobile phones, two other mediums work well in the PNG context: radio and face-to-face. A media access survey found that "mobile phones and radio are the most readily accessible media devices for PNG citizens." By contrast, newspapers, television and Internet remain inaccessible for most PNG citizens. Presentations or theatrical performances at community meetings can also be appropriate in villages in PNG.
   b) Tiny promotional stickers can be printed to fit onto the reverse side of mobile phone handsets: 6cm by 3cm is the recommended size, suitable for a range of handsets. Plastic stickers are much more long-lasting than paper stickers, which will fade quickly after being placed onto the back of mobile phones.

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48 If establishing a free SMS service is beyond the capacity of the organisation involved, it may be possible to reimburse participants by texting mobile phone credit to them. This could be done once responses are received or when they are due.
49 A Closed User Group (CUG) allows registered users to call and text each other member of the group for free. An organisation or company pays a monthly fee to the service provider (usually Digicel PNG) for each phone number in the group. Group members pay for personal communication with numbers outside the CUG. A CUG may not be appropriate when there are large numbers of people involved. A CUG is not appropriate for a service which is to be made available to the public; instead, a free-call number or free text message service can be established. Please contact the author for assistance, if required.
50 Please contact the author for supplier details.
51 Intermedia et al 2012, p. 10.
52 Intermedia et al 2012, p. 10; Watson 2011b.
53 Haseman, Baldwin and Linthwaite 2014.
5. Stakeholder participation is vital. Stakeholder engagement should include ongoing, consistent use of a communication plan and a reporting plan. Stakeholder consultation is particularly constructive during the writing of SMS questions or messages.

6. Rigorous research is constructive and highly recommended. The M4D field is still in its nascent stage and many pilots have been run without a rigorous research base. Therefore, there is great value in conducting thorough research. Alternatively, methodical monitoring and evaluation processes can also yield useful results.

7. M4D offers rewards in terms of cost-effectiveness and time-efficiency. In the law and justice sector trial, much more data was available through SMS than had been previously sourced through an expensive exercise involving attendance at a workshop and distribution of a paper form. The methodology employed in SMS Story appeared to be both cost-effective and time-efficient. A project which used mobile phones for disease surveillance in PNG found that “use of mobile phone technology might improve the timeliness and efficiency of public health surveillance.”

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54 Watson 2012, p. 48.
55 Kaleebu, Gee, Jones, Jauk and Watson 2013, pp. 68-70.
56 Rosewell et al. 2013, p. 1811.
References


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Economic & Public Sector Program

Economic and Public Sector Program strengthening key government institutions to support equitable service delivery to the men, women and children of Papua New Guinea

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