MAMA Bangladesh



Lessons Learned on the Way to 500,000 Subscribers

Acknowledgments

On behalf of the entire MAMA family, we want to thank the DNet team and the community of stakeholders they have engaged to make MAMA Bangladesh an international model of success. MAMA Bangladesh launched before the broader MAMA program and was the inspiration that sparked the MAMA work on the global level. Thanks to the vision our founding partners — USAID, Johnson & Johnson, United Nations Foundation, mHealth Alliance and BabyCenter — we have been able to turn the ideas, lessons and success of Bangladesh into a global movement that currently reaches more than 1.2 million women and their families. As this work expands globally, we continue to look to the MAMA Bangladesh team as a leader in sharing lessons learned and best practices which guide us all in creating mobile messaging services for scale, impact and sustainability.

Through the leadership of the DNet team, an innovative group of social entrepreneurs, MAMA Bangladesh is putting the power of health into the hands of more than 500,000 women and families. Thank you.

আপনজন

IN-COUNTRY PARTNERS IN BANGLADESH:

MCHIP Maternal and Child Health Integrated Program

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

dnet

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MCHIP Maternal and Child Health Integrated Program

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Glossary

BP	Brand Promoter
BRAC	Bangladesh Rural Advancement Committee
BTRC	Bangladesh Telecommunications Regulatory Commission
CA	Community Agent
DHS	Demographic and Health Survey
Dnet	A Bangladeshi social enterprise that promotes access to information and knowledge through innovations. Dnet is implementing the MAMA initiative in Bangladesh under the brand name "*Aponjon*."
Gatekeepers	Key family members of enrolled women that include husbands, mothers, mothers-in-law, fathers-in-law or other family members, who may influence decisions around pregnancy and child health or use of mobile phones.
icddr,b	International Centre for Diarrheal Disease Research, Bangladesh
IVR	Interactive Voice Response, a mobile phone technology allowing for voice- or touchtone-based interaction with an audio menu.
KABP	Knowledge, attitudes, behaviors and practices
M&E	Monitoring and Evaluation
MAMA	Mobile Alliance for Maternal Action
MaMoni	Integrated safe motherhood and family welfare, newborn care and family planning project, funded by USAID and implemented by Save the Children Bangladesh.
MDG	Millennium Development Goal
MCC	Multimedia Content and Communication Limited, a subsidiary of Dnet
MCHIP	Maternal and Child Health Integrated Program, a flagship program of USAID's Global Health Bureau and the primary USAID funding mechanism of MAMA Bangladesh.
MNCH	Maternal, Newborn and Child Health
MNO	Mobile Network Operator
MOHFW	Ministry of Health and Family Welfare
NGO	Non-Governmental Organization
NHSDP	(USAID's) NGO Health Services Delivery Project, implemented by Pathfinder International. Operates 328 primary health care clinics and 8,000 satellite clinics nation-wide.
PMP	Performance Monitoring Plan
SES	Socio-economic status
Shortcodes	Special telephone numbers – significantly shorter than full telephone numbers – that can be used to address SMS and MMS messages from certain service providers' mobile phones or fixed phones.
SMC	Social Marketing Company, a nonprofit established by the Government of Bangladesh, Population Services International and USAID.
SMS	Short Message Service, a mobile phone technology that allows text messages to be sent to and received by subscribers
SSD Tech	Systems Solutions and Development Technologies, a software development company in Bangladesh
Taka	Currency of Bangladesh
UISC	Union Information Service Center under the Government of Bangladesh
USAID	United States Agency for International Development

Executive Summary

This document explores the programmatic processes, successes and lessons learned by the Mobile Alliance for Maternal Action (MAMA) program in Bangladesh, known locally as *Aponjon*, meaning "the dear one" in Bangla. MAMA is an innovative public-private partnership that engages a global community to deliver vital health information to new and expectant mothers and their families through the use of mobile technology.

Bangladesh has made large strides with regards to improving maternal, newborn and child health (MNCH) outcomes, but in order to continue to progress in these areas and achieve the Millennium Development Goals 4 and 5, it is essential that Bangladesh leverage existing and new methods and tools to reach the women and families that need them the most. Of every 100 people in Bangladesh, just 55 have access to sanitation facilities, but 64 have mobile subscriptions.[1] This suggests that Bangladesh could both benefit from and support a mobile health program for MNCH.

In order to fully harness the potential of mobile technology to achieve scale, sustainability and impact, the *Aponjon* team tackles challenges related to female literacy and phone ownership, and diverse preferences from urban and rural populations. The *Aponjon* team has developed a highly complex technical platform, conducted robust formative research, and developed a strategic business plan for long term sustainability.

After a year of pilot testing, *Aponjon* was launched nationally in December 2012 by Bangladeshi social enterprise Dnet, in partnership with the Government of Bangladesh Ministry of Health and Family Welfare (MOHFW). Dnet has brokered partnerships with five mobile network operators, three large corporate partners and six outreach partners with community agents (CAs) in all 64 districts in Bangladesh. As of mid May 2014, *Aponjon* was reaching more than 500,000 mothers and families.

1. The Context

In Bangladesh, of every 100 people, just 55 have access to sanitation services while 64 have mobile subscriptions. This confluence of factors — high mobile penetration and a need to improve MNCH outcomes — signifies that a MAMA program is a good fit for Bangladesh.

The Government of Bangladesh has demonstrated significant interest to improve MNCH through investing resources and making commitments with support from a number of partners. Maternal mortality in Bangladesh has declined at an average of about 3.3 percent per year, compared with the average annual rate of reduction of 3.0 percent required for achieving MDG 5 in 2015. As such, Bangladesh appears to be on track to reduce the maternal mortality ratio by three quarters from 1990 levels.[2]

As Figure 1 demonstrates, Bangladesh is also on track to meet MDG 4: reducing the under-five mortality rate by two-thirds from 1990 levels. Bangladesh's neonatal mortality decline in the last decade is double the regional and global averages. Figure 2 illustrates the progress that Bangladesh has made in MNCH, and its trajectory towards meeting the MDGs.

Although Bangladesh has made large strides with regards to improving MNCH outcomes, it must continue to steadily decrease mortality to achieve the 2015 MDG targets. It is essential that Bangladesh leverage existing and new methods and tools to reach the women and families that need it the most.

Across the developing world, approximately 40% of people subscribe to mobile services.[5] In some countries, more people have access to a mobile phone than to a toilet, electricity, or even clean water. In Bangladesh, of every 100 people, just 55 have access to sanitation services while 64 have mobile subscriptions.[6] This confluence of factors — high mobile penetration and a need to improve MNCH outcomes — signifies that a MAMA program is a good fit for Bangladesh.

While the number of mobile subscriptions in the developing world has skyrocketed, women have not proportionately benefitted. The GSMA Development Fund discovered, for example, that "a woman is 23% less likely to own a mobile phone than a man if she lives in Africa, 24% if she lives in the Middle East, and 37% if she lives in South Asia."[7] As such, Dnet hypothesized before *Aponjon's* pilot phase that very few women would possess their own phones to receive the messages. Another potential barrier to reaching women over mobile phones is illiteracy—in Bangladesh, female literacy is around 50% and is significantly lower in rural areas (47%) than in urban areas (62%).[8] To determine how best to reach women with varying literacy levels and phone ownership, as well as to understand a variety of other related factors, Dnet carried out extensive formative research.

FIGURE 1.
High-mortality countries with greatest percentage declines in under-five mortality rate from 1990-2012[3]

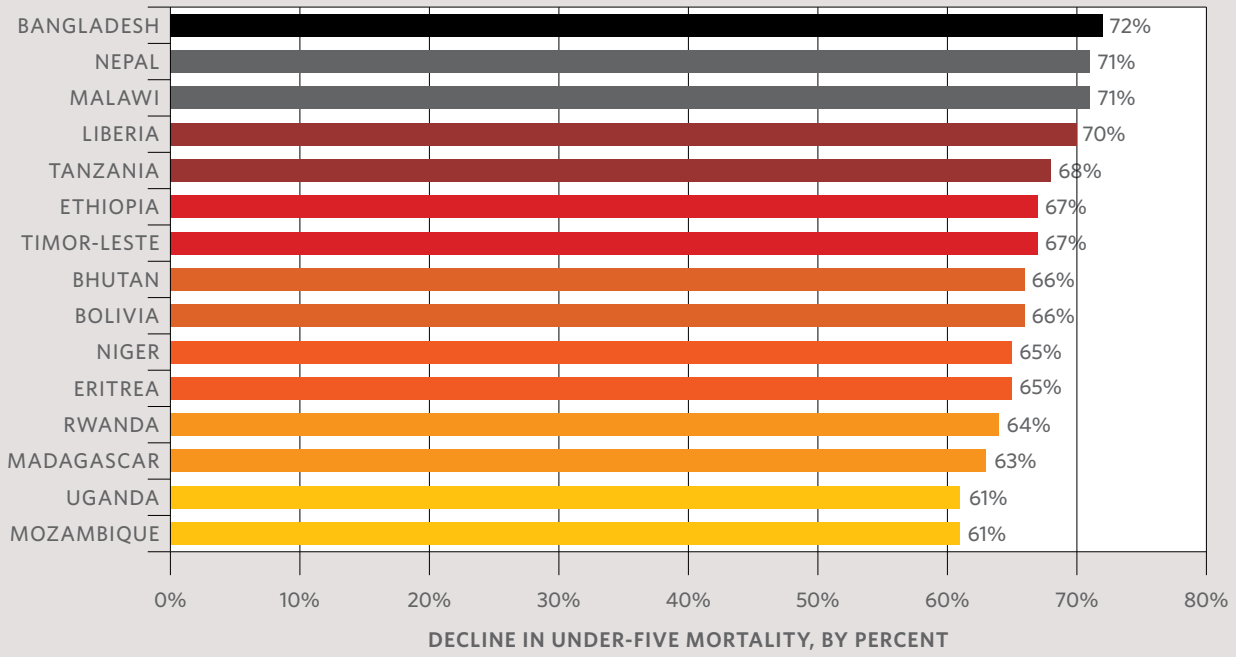
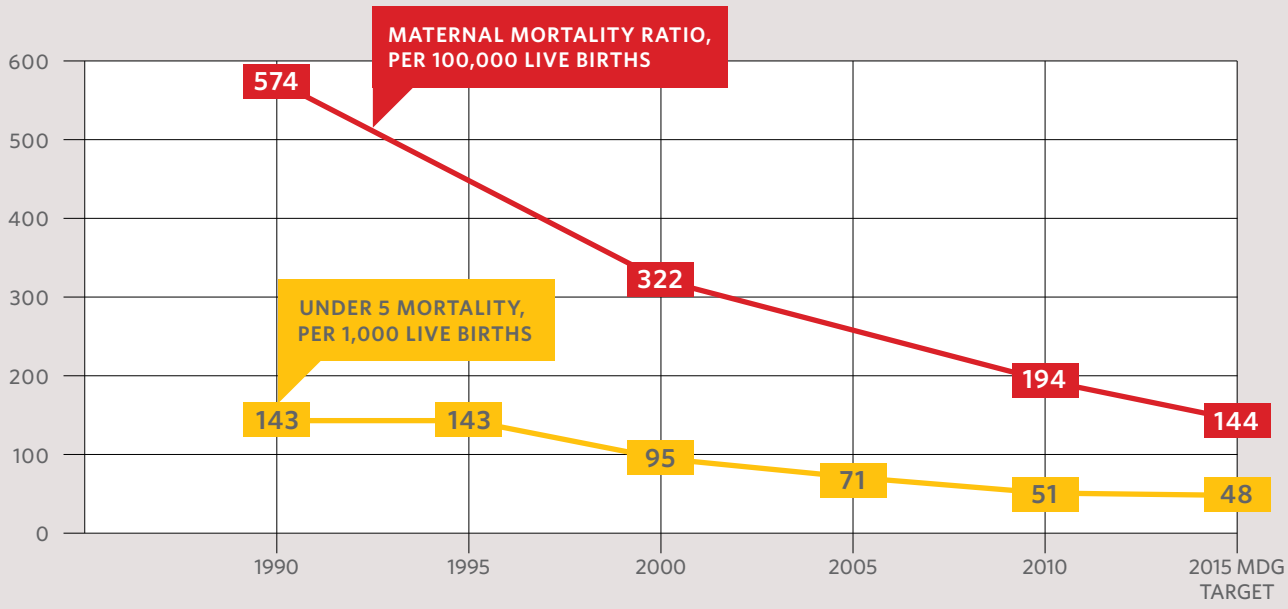


FIGURE 2.
Maternal and Child Health in Bangladesh[4]



2. MAMA and *Aponjon* Service Overview

Information is delivered twice weekly in one of two forms: SMS or 60-second voice messages. The voice messages are a mix of "mini-skit" messages, with local actors playing the roles of a doctor, pregnant woman, mother and mother-in-law; and direct messages.

The Mobile Alliance for Maternal Action (MAMA) — founded by the U.S. Agency for International Development, Johnson & Johnson, United Nations Foundation, mHealth Alliance and BabyCenter — is an innovative public-private partnership that engages a global community to deliver vital health information to new and expectant mothers and their families through the use of mobile technology. MAMA directly supports country programs in Bangladesh and South Africa, with India scheduled to launch in 2014. These programs support more than 750,000 women and families through their pregnancies and the first three years of parenting.

The MAMA Bangladesh program is called *Aponjon* (meaning 'the close/dear one' in Bangla). After a year of pilot testing, *Aponjon* was launched nationally in December 2012 by Bangladeshi social enterprise, Dnet, in partnership with the Government of Bangladesh MOHFW. Dnet has also brokered partnerships with six outreach organizations, five mobile network operators, and three large corporate partners. In the 15 months since launch, it has grown to serve 500,000 mothers and families and trained over 3,000 CAs and brand promoters (BPs) who assist subscribers to sign up for the service. Currently, 88% of customers are registered by assistance through the call center, CAs, or BPs, while just 12% self-register. Self-registration is completed by sending SMS keywords to the shortcode 16227 or through dialing 16227 and following the IVR menu to self-register.



Information is delivered twice weekly in one of two forms: SMS, or 60-second voice messages. The voice messages are a mix of "mini-skit" messages, with local actors playing the roles of a doctor, pregnant woman, mother and mother-in-law; and direct messages. In the dramatic format, characters enact scenarios in an entertaining and educational way. Dialogues range from the doctor explaining the importance of iron-rich food, to reminding the pregnant character that it is time for her medical checkup. Messages around medical emergencies and warning signs are in the direct, straightforward format. Dnet also created a unique service specifically for husbands and other household members, which reinforces messages provided to the mother and encourages family involvement in healthy decision-making around pregnancy, birth and infant care. This service adds one additional message per week, increasing the total from two to three messages weekly. In addition, Dnet offers a counseling line to subscribers which serves as a direct channel to communicate with a doctor about health problems. To offer this service, the Dnet collaborates with Synesis IT, an IT firm that serves as the call center service provider.

During registration, subscribers are asked to provide the date of their last menstrual period, their estimated delivery date or their baby's birth date. This information is used to time the messages so that they are delivered to correspond with the user's pregnancy stage or baby's age, reflecting her particular experience at that time. The user is also able to select a preferred time of day for message delivery so that the message is received when it is most convenient.

Dnet generates multiple streams of revenue through low user fees, advertisements, corporate partnerships and a 'Sponsor-a-Ma' campaign in the stores of Bangladesh's largest retailer. *Aponjon* costs 2 taka (about $0.025 USD) per message, but the service is provided free-of-charge to the poorest 20% of subscribers. Upon registering subscribers, the *Aponjon* team collects socioeconomic status information which determines whether or not they qualify for the service free-of-charge.



3. Formative Research

The formative research was conducted to gain knowledge in the following broad subject areas: gender and mobile phone ownership; effective strategies for enrollment and promoting user awareness; acceptable cost models; user satisfaction of the content and tech platform; influence of content on MNCH-related health seeking behaviors; and the involvement of family members in the service.

Dnet carried out extensive formative research before launching the service nationally. The formative research included 1,403 subscribers from five Divisions, including 349 pregnant women (25%), 575 mothers of children under age one (41%), and 479 other household decision-makers (e.g. husbands, mothers-in-law) (34%). The formative research period lasted from September 1, 2011- May 31, 2012.

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The Johns Hopkins School of Public Health (JHSPH) mHealth Initiative produced a research report that examines and analyzes Dnet's formative research. JHSPH's report explores programmatic decision-making and implementation science— making Dnet's formative research a useful tool for the greater mHealth ecosystem. Findings from JHSPH's Formative Research Report are included and cited throughout this document.

Key findings about female phone ownership, technical literacy and inclusion of family members

The formative research revealed that female phone ownership was much higher than expected—just over half of the women who subscribed to the *Aponjon* service reported using their own phones to subscribe to and receive the messages. Of those who did not use their own phones, 35% used a family member's phone and 6% used their neighbor's phone. Keeping this in mind, Dnet worked closely with the CAs to choose the best timeslot of the day for a woman to receive the message based on when she would have direct access to a mobile phone. The lack of exclusive access to mobile phones was found to be a challenge to the service in a variety of ways: a series of in-depth interviews revealed that women who could listen to or read the messages on their own did better in terms of retaining the information provided through the service, versus those who had the content of the messages repeated to them through a third party.

The team also learned that women who have received little or no schooling tend to be basic users of mobile phones—they know how to receive or discontinue a call by pressing the "send" or "end" button on the phone, but lack further technical literacy. As such, Dnet developed an option to send voice messages through a "message push" service where users receive a voice message through an incoming call and only have to press the receive button to listen to the message. During the in-depth interviews users expressed high levels of satisfaction with this option. Women surveyed also approved of the ability to select a time to listen to the message because it allowed them to listen when they were less busy and/or in the mood to do so.

This had implications for the technology platform. Due to the demand from women to receive messages at different times of the day, it was important that the tech platform could effectively manage traffic. *Aponjon's* technology partner, SSD-Tech, worked to ensure that at a certain time of day the platform did not fail to deliver messages to certain clients due to



volume overload. They worked to predict the volume and make necessary preparations to accommodate varying message flows.

Dnet also learned that it is important to involve other family members in the program, e.g. the woman's husband, mother-in- law, or other relatives, to ensure that the mother is supported. Surprisingly, almost 60% of these "gatekeepers" reported that they do not own the mobile phone they use for the service and the majority (73%) reported that they were not heads of their households.[9] While no data was collected to disaggregate gatekeepers by gender or age, these findings suggest that many "gatekeepers" are mothers-in-law (Bangladesh has a patrilineal kinship system).

The formative research confirmed that inclusion of other household decision-makers resulted in better household practices in terms of nutrition, antenatal visits, preparation for delivery and other types of care important for a pregnant woman and newborn. Moreover, willingness to pay for the service was higher when men were included rather than when women paid for the service alone. In the pilot, slightly more than half (53%) of other household members received the messages along with the target women. During the pilot, separate messages were provided to these family members, but in a generalized form. Dnet decided after the pilot to personalize the messages for each type of family member based on the large amount of interest they showed in participating in the service.

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4. Content Development

Dnet decided to offer the service in the form of voice messages using interactive voice response (IVR) in addition to SMS in order to reach subscribers with low literacy levels. Dnet found that 78% of subscribers who registered through CAs chose the voice message option.

The development of message content for *Aponjon* was completed by an in-house Dnet content team with assistance from Multimedia Content and Communication Limited (MCC), a subsidiary of Dnet. MCC Ltd employed a four-step process to develop the messages, which included: message content development; message design; development of voice and text; and quality assurance.

Message content identification

Message content identification consisted of ethnographic research, a review of national guidelines and international literature on MNCH, and an expert review by a panel of Bangladeshi physicians, researchers and communications professionals. Input and expertise from this panel helped to ensure content comprehensiveness.

As part of the process, research was conducted to assess women's awareness of the Bangladeshi government's separate circulated MNCH messages. Of those surveyed, 63% said they had heard of them and 77% said that they needed more advice/information in addition to what was contained in these government circulated messages. As such, the *Aponjon* team decided that its messages should both reinforce and complement the government circulated messages.

Message design and production

The ethnographic research consisted of a needs assessment survey of 300 women (with at least one child) and 300 family members. This research was used to gain insight into mothers' preferences around message delivery, and their ability to understand the content based on different tones and formats.

Important findings from this part of the needs assessment included: 63% of survey respondents preferred to have the messages repeated; women first realized they were pregnant around 6-7 weeks; the majority (64%) of respondents reported that they preferred to receive medical advice from a female doctor; and the majority wished to receive messages until the child's first birthday. As such, the Dnet decided that messages would be sent twice weekly, have the option to be repeated, begin at the sixth week of pregnancy, use the voice of a female doctor and continue until the child's first birthday.

Dnet carried out language research to determine which language(s) to use in the text messages. One of the large challenges for SMS was that most (92%) of the basic feature phones did not support Unicode-based Bangla. Conveniently, the majority of survey respondents said their preferred language was Banglish (Bangla written in English characters). In addition, survey respondents were in favor (88%) of customary English words being displayed in English instead of Bangla synonyms. As such, Dnet opted to use Bangla with English characters for SMS messages.

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messages. Dnet conducted audio format research to determine the appropriate format, tone and character for the messages. Subscribers were asked to listen to the messages in three different formats and decide which they favored most. Around 82% reported that a lady doctor was the most trustworthy source of information. The voice message consisting of a dramatic role play with a female doctor, Daktar Apa ("a lady doctor"), was preferred most and was hence chosen as the primary voice message format.

After the needs assessment was conducted, feedback from BabyCenter was obtained and incorporated into the messages. Finally, the messages were officially approved by the Information, Education and Communication (IEC) committee of the Ministry of Health and Family Welfare.

In addition, the formative research and content surveys in Chittagong and Sylhet revealed that the content was difficult for people to understand, specifically older subscribers. As such, Dnet decided to carry out a short ethnographic survey in mid-2013 to identify the specific dialects most commonly spoken by people in these regions. Dnet then translated and recorded the MAMA messages in these local dialects and plans to deploy them in mid-2014.

Quality assurance

Quality assurance consisted of user testing in a focus group, structured interviews and surveys during the pilot period and after national level launch. This research was conducted to assess the acceptability of the messages among potential subscribers.

From the formative research, the trust of the messages was found to be very high among the subscribers — on a Likert scale of 1-5, most of the subscribers rated their trust of the content as 5 (28%), or 4 (63%). In addition, over 90% of the respondents felt that *Aponjon* messages were meeting their needs for information during and after pregnancy.

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Subsequent adaptations

The *Aponjon* team continues to adapt the messages to meet the demands and needs of subscribers, changes in MNCH care, and best practices in mHealth. For example, Dnet initially had just one set of messages for household members but upon realizing the diversity of this group developed three different message sets: one for the husband, one for the mother-in-law, and one for an "other" category that is intended for a generic household member. The content is more or less the same, but the messages are more personalized – the name of the person being addressed (father, mother-in-law, etc.) is different, as is the way the pregnant woman or new mom is addressed (your wife, your daughter-in-law).

Most of the subsequent adaptations have been to cater the content and format of the messages to urban and rural contexts. Urban subscribers reported that much of the content in the messages wasn't relevant to them, such as the content around health workers and clinics. Dnet developed a set of messages specific to urban settings, which includes content around hospitals, obstetricians, car seats, maternity leave, diapers, etc.

Additionally, in the first needs assessment survey, rural people said they wanted a "drama"-style voice message, while urban people wanted a more straight-forward format. However, feedback from rural subscribers revealed that in contrast to the findings in the first needs assessment survey, they preferred to receive the most important messages/ information in a more straightforward format. Rural subscribers also articulated that they wanted more repetition of significant content (e.g. information on why a vaccine is important, various reminders on when to go to the clinic for the vaccine), but urban subscribers expressed the desire for message content to be repeated less. This feedback from both groups informed the fourth version of the messages.



Customer Acquisition

5.

Dnet's outreach approach includes both assisted registration through local CAs, and self-registration via SMS, IVR or a call center.

CAs and outreach partners

Aponjon receives assistance from CAs from outreach partner organizations who make door-to-door visits in rural, remote and often isolated regions of the country. These CAs have gained the trust of their communities by providing advice and access to services and information. As such, CAs serve as a gateway to reach and inspire women and their family members to enroll in the service. As of February 2014, there were approximately 3,000 CAs working across 44 districts in all seven administrative divisions.

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In these districts, CAs assist women with enrollment in the service by filling out a registration form. The registration form covers information on socio-economic status, education, date of last menstrual period or the baby's birth date, a valid mobile phone number of the woman and/ or valid mobile phone number(s) of her husband/ family members (if they wish to subscribe to the service), choice of the channel of message delivery (IVR/SMS), and the time to receive the IVR messages. If a woman chooses to opt in a family member to be included in the service, she makes a decision as to whether both messages (two for her and one for the family member) should be pushed to the same mobile phone or to two different mobile phones. Completed forms are sent to the Dnet office to be entered into the registration database managed jointly by the Dnet technology team and SSD-Tech, Dnet's primary technical partner.

The Dnet team determined that continuous communication with the CAs was essential to ensure high-quality registration data and adequate subscription numbers. From September 2012 to October 2013, Dnet organized and conducted over 100 batches of training. Dnet also provides the CAs with a notebook manual in Bangla as a short and simple guide. In addition to attending a one-day training session, CAs are expected to answer questions about the service, respond to any issues with service delivery, and inform Dnet of any changes in subscriber status or deregistration requests. Finally, they are expected to observe and report back to Dnet about any changes in subscribers' health behaviors as a result of the program.

The formative research revealed that 78% of subscribers were enrolled in *Aponjon* through CAs. As CAs serve people in lower-income settings, 51% of subscribers were from the ultra-poor category, 25% of subscribers were from the poor category, and 16% came from the lower middle income category. Only 5% of subscribers registered by CAs were from the middle class, and 3% were from the upper middle class or above.[10]

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Dnet forged strategic partnerships with six outreach organizations (NGOs and social enterprises) to utilize their field level health workers, referred to as CAs. In addition to the CAs, there are standalone agents (SAs) who belong to the Smiling Sun Clinics of the NGO Service Delivery Project (NHSDP), Blue Star Clinics of Smiling Sun Clinic (SMC) and the Union Information Service Center under the Government of Bangladesh.

Dnet's outreach and training team provides different types of incentives to CAs, SAs and other key stakeholders who are directly involved in field level registration. CAs are given cash incentives in the form of 10 to 15 taka per registration. In addition, they are eligible to

receive personal rewards upon successful registration of a certain number of clients (50 clients, 100 clients, 500 clients etc.) in the form of a gift such as a branded mug or t-shirt.

BRAC (Bangladesh Rural Advancement Committee) is an NGO that works to alleviate poverty and empower the poor. BRAC has a large field level presence for primary health care in rural Bangladesh. BRAC's CAs, called "Shasthyo Kormis", assist with rural enrollment in 14 districts.

In addition to collaborating with BRAC to reach rural women, Dnet operates Infolady, an entrepreneurship program that focuses on poverty alleviation through improved access to information and knowledge as well as empowerment of rural women and the poor. An Infolady is a trained, rural woman who delivers a variety of Information and Communication Technology (ICT)-based and essential services door-to-door in rural communities. Infoladies offer information and communication services related to health, education and farming, among others. They also provide contraceptives and sanitary napkins to the rural women, who generally do not visit shops to purchase these products for social and cultural reasons. Many Infoladies have gained the trust and acceptance of thousands of rural women. Since 2011, Infoladies have included *Aponjon* in their service portfolio for rural women and earn extra income in the form of a registration incentive.

The Maternal and Child Health Integrated Program (MCHIP) is the USAID Bureau for Global Health's flagship MNCH program, which focuses on reducing maternal, neonatal and child mortality and accelerating progress towards achieving Millennium Development Goals 4 and 5. In 2009, MCHIP received an associate award to build on the work of Save the Children and USAID's project called ACCESS in the Sylhet and Habiganj divisions in Bangladesh. MCHIP's project, entitled "MaMoni – Integrated Safe Motherhood, Newborn Care and Family Planning Project," supports *Aponjon* in the Habiganj district of Sylhet. In addition, USAID's NGO Health Services Delivery Project (NHSHP) assigned 1,297 of their health workers and SAs to work as *Aponjon* CAs across 37 districts of all seven divisions in the country.

FIGURE 6.
Outreach Partners and CAs by Division, as of February 2014 [11]

Outreach Partner	Number of CAs with Aponjon	Division
NHSDP and Smiling Sun Clinics	1297	37 districts across all 7 divisions of Chittagong, Khulna, Rajshahi, Dhaka, Barisal, Sylhet, Rangpur
BRAC	1221	14 districts across the 6 divisions of Khulna, Barisal, Dhaka, Chittagong, Rangpur, Rajshahi
Infolady (run by Dnet)	52	5 districts across 5 divisions in Dhaka, Sylhet, Chittagong, Rangpur and Rajshahi
UISC	15	Brahmanbaria District in Chittagong
MaMoni	40	Habiganj district in Sylhet
SMC	245	24 districts across the 6 divisions of Barisal, Chittagong, Dhaka, Rangpur, Sylhet, Rajshahi

SMC is a nonprofit established by the Government of Bangladesh, Population Services International and USAID. SMC is a major contributor to the Bangladesh national family planning program, providing contraceptives to more than one third of all users in the country. It pioneered the large scale use of life saving oral rehydration salts (ORS) in the country and operates one of the largest private sector ORS manufacturing facilities in the world. SMC runs Blue Star Clinics, which provide health care to people in different areas of the country.

Finally, UISC CAs provided support to *Aponjon* towards the end of the formative research phase. Today, these CAs are operational only in the Brahmanbaria district in Chittagong. *Aponjon* has 15 SAs working through 15 UISCs. UISCs are entrepreneurial initiatives run by the Access to Information Office of the government.

Issues with CAs and decision to use BPs

Dnet has encountered a few challenges working with CAs. One of the principal problems is that CAs work under specific outreach partner organizations and have other responsibilities and products to sell or promote. CAs are paid by *Aponjon's* outreach partner organizations, and therefore are not held financially accountable for the part they play in the *Aponjon* registration process. As such, many CAs have been found to be inactive in promoting and registering subscribers for the *Aponjon* service — an assessment in 2013 revealed that of nearly 3,000 CAs, only 700 were active in registering subscribers to *Aponjon*.

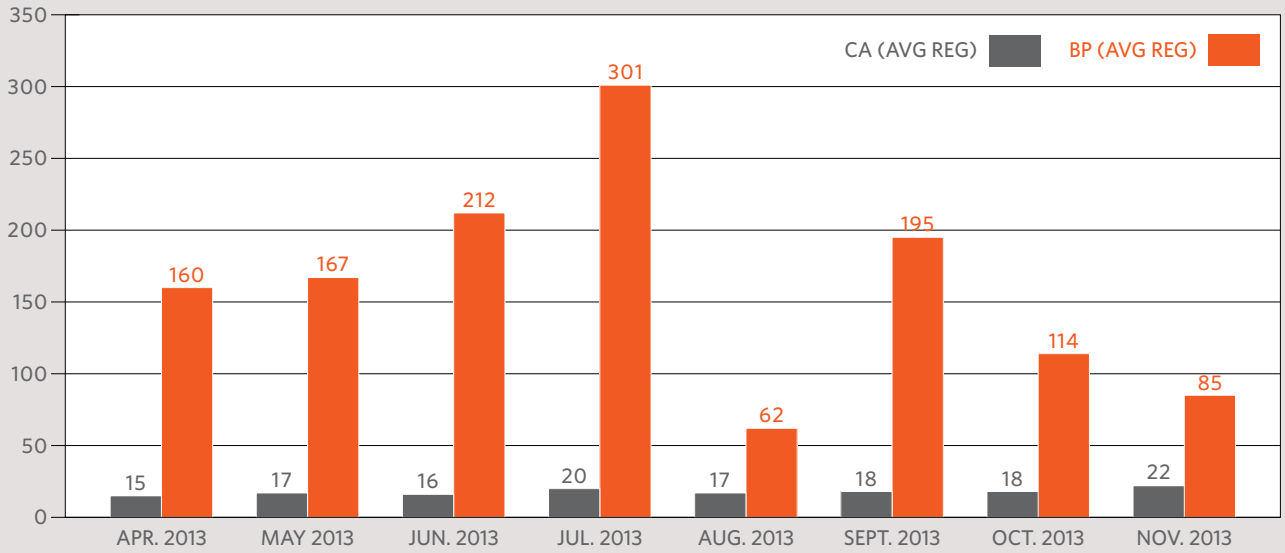
To address these challenges, Dnet decided to focus increasing the productivity of active CAs by providing refresher training. The refresher training included a Dnet produced video of an exemplary CA who provides subscribers with accurate and complete information regarding the service. The video reduced costs for the Dnet outreach team as they were required to travel less for training.

In addition, Dnet decided to introduce brand promoters (BPs) to increase subscription to the service overall, but also to reach urban women and their families as most CAs are deployed to rural and semi-urban areas. BPs are trained professionals whose sole job is to register people to *Aponjon*. BPs are employed by commercial agencies and local NGOs across the country. BPs work in hospitals, clinics and doctors' offices to inform potential subscribers about *Aponjon* and help them register. BPs are deployed in eight districts: Dhaka, Chittagong, Rangpur, Rajshahi, Khulna, Barishal, Sylhet and Mymensing. BPs also promote *Aponjon* by distributing leaflets, stickers and other materials.

Dnet found there is a higher one-time hiring and training cost associated with BPs, but little to no maintenance as there are no additional incentives to pay. In addition, BPs have a higher education level than CAs which helps with issues around filling out the registration forms. In addition, because BPs have a designated quota related to their payment, accountability is high. Furthermore, Dnet has put into place check points and continuous monitoring of BPs to avoid false registrations. As of December 2013, almost three hundred BPs have subscribed almost 80,000 people to *Aponjon* and have been much more efficient than the CAs. However, BPs work primarily in urban areas where subscribers also tend to be better educated and perhaps more able to pay, which may impact their significantly higher registration numbers.

As of December 2013, three hundred BPs had subscribed 80,000 people to *Aponjon.*

FIGURE 4.
Average number of registrations per individual CA and BP



Self-registration is completed by sending SMS keywords to the shortcode 16227 or through dialing 16227 and following the IVR menu to self-register. Currently 12% of the clients are self-registered while the remaining 88% are registered with assistance through the call center, CAs or BPs. The majority of self-registering subscribers are from the middle class.

Self-registration

Self-registration is completed by sending SMS keywords to the shortcode 16227 or through dialing 16227 and following the IVR menu to self-register. Currently 12% of the clients are self-registered while the remaining 88% are registered with assistance through the call center, CAs or BPs. The majority of self-registering subscribers are from the middle class. Some of these subscribers learned about the service from popular campaigns organized during the pilot. Popular campaign enrollment strategies included leaflets, loudspeaker broadcasting, posters, arrangements with local hospitals and community meetings. These popular campaigns were launched in just a few select urban areas, and as a result only 2% of women and 5% of other household decision-makers recalled these campaigns.

Media campaigns

From October to December 2013 Dnet produced two television commercials, two radio commercials, two billboards and press advertisement designs. These media campaigns served to announce the launch of *Aponjon*, raise awareness of its benefits, promote the shortcode 16227, build brand awareness, and establish the visual identity of the brand.

The television commercials consisted of two versions — one focused on pregnant women and one on new mothers. They aired on four channels, including Bangladesh Television (BTV), a state-owned broadcaster that reaches 80% of the population. The commercials also aired on the highly viewed television cable and satellite channel, ATN Bangla, as well as on Bangla Vision and My TV. As such, it is estimated that the television advertisements reached around five million viewers.

Aponjon's television commercials broke out of the conventional public health communication approach by creating a more humorous and accessible advertisement. Dnet deemed this approach a success due to an increase in the number of calls to the call center and

registrations. The media campaign lasted only fifteen days and resulted in a significant increase in the number of new subscribers — 5,919 expecting or new mothers, and 5,270 family members. The large number of new family subscribers can be attributed to the fact that the television commercials highlighted that the messages are for husbands and family members as well as pregnant women and new mothers.

In addition to television commercials, Dnet released two *Aponjon* radio commercials (one for pregnant women and one for new mothers) that aired on a major FM station, Radio Today, with radio jockeys endorsing the *Aponjon* service on air. It is estimated that around 200,000 people listened to the commercials and radio jockeys. Dnet also extended its *Aponjon* media campaign to the newspaper, and released thematic press ads in the major dailies in the country for nine days. Around two million people had the opportunity to see the adverts. The primary focus of these ads was the shortcode.

Dnet also developed eight billboards and placed them in four major cities — Dhaka, Chittagong, Khulna and Sylhet. The billboards were placed in strategic locations in areas with the highest level of traffic. In addition, Dnet implemented a below-the-line campaign through local NGOs. This campaign consisted of decoration of three-wheeler rickshaws and vans with *Aponjon*-themed plates, the distribution of 1,000 posters in five districts, and a branded MicroBus for *Aponjon* field level training and visits. *Aponjon's* media campaign also extended to social media and its website. The social media and online campaign included promotion of the *Aponjon* website through online ads, a Facebook photo and video contest, and a mass email. The social media and online campaign generated more than 10,000 likes and reached almost 1,000,000 people through the Facebook page in nine months.

Despite relative success, Dnet decided that in the future it would not carry out another large media campaign because it is extremely costly and BP channels are more cost effective. One further TV commercial has been produced and aired. This commercial adopted a more somber tone intended to draw people's attention to the seriousness of health risks for children in Bangladesh.

Local fairs are also leveraged as an opportunity to market the *Aponjon* service. These fairs, held by *Aponjon's* outreach partners (local NGOs), offer free medical services and feature performances by local folk singers and other performers. The *Aponjon* team distributes flyers and other collateral to attendees. In addition, the MoHFW in Bangladesh permits Dnet to advertise *Aponjon* at any government health clinic.



6. NGO, Public and Private Partnerships

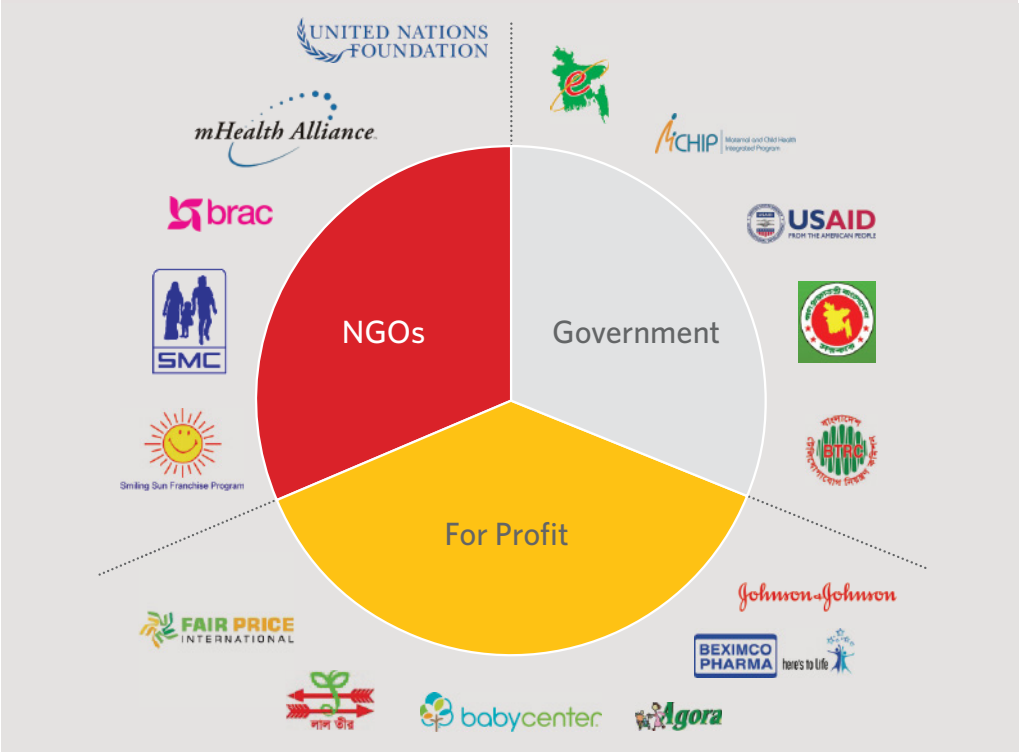
Mobile health project implementation is done best through a consortium of partners. Aponjon's consortium includes organizations with technical and content expertise, access to clinical services and health workers, and experience in monitoring and evaluation among others.

Dnet serves as the MAMA Secretariat in Bangladesh, and oversees service design and deployment.

Mobile health project implementation is done best through a consortium of partners. *Aponjon's* consortium includes organizations with technical and content expertise, access to clinical services and health workers, and experience in monitoring and evaluation among others. *Aponjon* has robust partnerships with outreach organizations (as previously discussed), the public and private sectors, and five different telecommunication companies. *Aponjon's* technology partnerships will be discussed in a subsequent section of this document.

Figure 5 illustrates the variety of partners *Aponjon* has secured on various levels. At the global level, *Aponjon's* partners are MAMA's partners: Johnson & Johnson, USAID, United Nations Foundation, the mHealth Alliance and BabyCenter. Johnson & Johnson and USAID provide direct financial support, BabyCenter provides content support, while the mHealth Alliance and the UN Foundation provide technical and programmatic support. At the country level, the *Aponjon* team builds upon existing USAID and Government of Bangladesh maternal child health and family programs, and is implemented through MCHIP. MCHIP provides technical support to the MAMA global partnership in its evaluation framework, as well as management and technical support to Dnet. MCHIP has awarded a sub-agreement to Dnet to fund specific service elements of MAMA in Bangladesh under the brand name *Aponjon*. Dnet serves as the MAMA Secretariat in Bangladesh, and oversees service design and deployment.

FIGURE 5.
Aponjon Partnerships by Type



Public

The Bangladeshi government has been involved with *Aponjon* since the pilot phase. The MoHFW is the official government partner of *Aponjon*. The Ministry takes ownership of the initiative through an Advisory Board consisting of representatives from all relevant agencies of the government. In addition, The Access to Information Program II (A2I-II) hosted by the Prime Minister's Office spearheads the process of mainstreaming e-service delivery mechanisms within government agencies and as such facilitates coordination among various government agencies for the *Aponjon* initiative.

The Bangladeshi government has been involved with Aponjon since the pilot phase. The MoHFW is the official government partner of *Aponjon*.

Aponjon's partnership with the Bangladeshi government helps to coordinate efforts with related public health awareness campaigns run by the government. In addition, the MoHFW validated *Aponjon's* messages for accurateness and alignment with national health policies. Government health officials and experts on the *Aponjon* Technical Committee on Content work to ensure the *Aponjon* messages align with new health policies, initiatives and information. The partnership with the government also provides *Aponjon* with the opportunity to form new partnerships with national and international entities at forums and events.

Another important public sector contribution comes from the Bangladesh Telecommunications Regulatory Commission (BTRC). BTRC is the regulatory body for telecommunication and value-added services through mobile networks. As such, BTRC coordinates with all telecommunications operators on *Aponjon's* behalf and helped secure approvals for differential charging for national scale operations. In addition to providing technical assistance, BTRC aided Dnet in initiating technical integration with Teletalk, Bangladesh's state-run mobile network operator. BTRC also approved the *Aponjon* Counseling line, a new *Aponjon* service which allows active subscribers to call a hotline number to talk to a doctor. BTRC has the authority to assign and manage the shortcodes, and has provided Dnet with access to and help managing its shortcodes.



Aponjon's partners in the private sector, Beximco Pharmaceuticals, Lal Teer Seed and Rahimafrooz Superstores, bring diverse expertise to the table and promote *Aponjon* through their various channels.

Currently, *Aponjon* has completed integration with five major operators with a combined market coverage of 98.8%, and Dnet is in talks with the sixth, Teletalk.

Corporate

Aponjon's partners in the private sector, Beximco Pharmaceuticals, Lal Teer Seed and Rahimafrooz Superstores, bring diverse expertise to the table and promote *Aponjon* through their various channels. Beximco Pharmaceuticals Limited (BPL) is a leading manufacturer of pharmaceuticals and active pharmaceutical ingredients in Bangladesh. BPL is a corporate founding partner of *Aponjon* and provides financial support and promotes *Aponjon's* services through its country-wide network of doctors.

Lal Teer Seed is the largest biotechnology and seed production company in Bangladesh. Lal Teer has given in-kind support to *Aponjon* for below-the-line activities to make the initiative successful. For example, they have promoted the *Aponjon* service in their leaflets, calendars, posters, banners, and signboards which reach the doorsteps of farmers in the most remote areas of Bangladesh. Moreover, Lal Teer has promoted *Aponjon* to the families of farmers through dramas shown in different districts.

Rahimafrooz Superstores Limited (RSL) has a retail supermarket chain in Bangladesh called Agora, which sells *Aponjon's* Sponsor-a-Ma package. The Sponsor-a-Ma package consists of a gift (e.g. a teddybear) that is purchased in store, coupled with a donation to provide the *Aponjon* service to a mother for a total of 89 weeks, from her sixth week of pregnancy through her baby's first year. Sponsor-a-Ma benefits the 30% of mothers living below the poverty line who otherwise would not be able to afford *Aponjon*. Rahimafrooz has coordinated with Agora chain stores to set up a display stall where people can learn more about this Sponsor-a-Ma package and *Aponjon* service.

FIGURE 7.
Telecommunications Operators in Bangladesh

Mobile Network Operators	Approximate Subscribers (millions)
Grameen Phone Ltd. (GP)	47
Banglalink Digital Communications Limited	28
Robi Axiata Limited (Robi)	25
Airtel Bangladesh Limited (Airtel)	8
Pacific Bangladesh Telecom Limited (Citycell)	1
Teletalk Bangladesh Ltd. (Teletalk)	3

Source: BTRC 2013

Mobile Network Operators

One of the main challenges that *Aponjon* faced during its pilot was to get all the mobile network operators (MNOs) under one umbrella. Grameenphone (GP) was the only operator partnered with Dnet at the time of the pilot. As such, areas like Chittagong – which had low GP coverage – had a much lower number of *Aponjon* subscribers during the pilot. Before the national launch four telecom operators (Grameenphone, Robi, Banglalink, Airtel) were integrated into the *Aponjon* service. Negotiation and technological integration with each telecom operator was a lengthy and complicated process and each integration was approved by the BTRC. Working with MNOs was also complicated by the fact that *Aponjon* offers differential charging, but doesn't charge customers directly. Instead the telecoms charge subscribers and then share part of this revenue with Dnet.

Currently, *Aponjon* has completed integration with five major operators with a combined market coverage of 98.8%, and Dnet is in talks with the sixth, Teletalk.



Tech platforms and counseling line

Dnet is currently partnered with SSD-Tech, an IT organization, for its technical platform. SSD-Tech hosts servers that contain subscriber information, and maintains the system connection with the telecom operators which is the interface that channels the messages through the service. SSD-Tech handles multiple variations in the modes of delivery (IVR/SMS, push/pull, multiple time slots, inclusion/exclusion of family members, free/paid subscriber mode, expecting/new mother mode, stage-based message delivery based on last menstrual period/child's birth date, etc). Handling all of these modes of delivery (around 40 variations in total) requires highly complex technical designs and bandwidth. The large number of delivery types also means that there are many potential bugs and technical glitches. As such, Dnet has around-the-clock monitoring for these issues. The platform is also required to facilitate "MT charging" whereby the client is charged as and when they receive messages.[12]

Dnet also collaborates with Synesis IT, an IT firm that serves as the call center service provider. Synesis IT developed a customer relationship management system to cater to the *Aponjon* service as well as a separate system for the counseling line. In addition, Synesis IT developed a ticketing system linked to the call center that generates "problem tickets" based on calls that communicate issues with the Dnet team. Dnet also has an in-house technology team that has developed solutions to facilitate the service and its monitoring. These include Android applications to be used by BPs to register clients, a project monitoring and reporting system (PMRS), a blogging tool, and many others.

During field surveys and the formative research, subscribers said that they would like *Aponjon* to offer a direct channel with which to communicate with a doctor about health problems. After three months of testing, a counseling line service was added to *Aponjon's* existing services in April 2013. During the testing phase, female doctors experienced in gynecology, obstetrics and pediatrics were trained to deliver of health information over the counseling line. The service is available to active subscribers only. By dialing the 16227 shortcode, subscribers can speak to an *Aponjon* doctor about health concerns. In June 2013, 223 new mothers, 405 expecting mothers, and 496 family members called the *Aponjon* counseling line and talked to doctors. Dnet is aware of the limitations of providing medical advice to clients by doctors over the telephone and as a result, a large number of referrals to nearby hospitals are made through the service.

Business Model

7.

Aponjon is poised to become the first financially sustainable health information service utilizing mobile phones to improve health outcomes at national scale in a developing country. Dnet uses innovative financing models, leveraging corporate social responsibility (CSR) funding at local and global levels and subsidizing the service for the poorest subscribers by charging a small user fee to the slightly more well-off subscribers. Dnet also uses advertising and sponsorship donations.

Aponjon is poised to become the first financially sustainable health information service utilizing mobile phones to improve health outcomes at national scale in a developing country.

As Figure 8 illustrates, *Aponjon* is financed primarily though support from development agencies (88%) , namely USAID. The next largest portion of *Aponjon's* funding comes from local CSR (7%), followed by the Sponsor-a-Ma campaign (4%). Together, user fees and fees charged to companies interested in using the messaging for advertising make up slightly less than 1% of *Aponjon's* funding.

Dnet is working to restructure funding for *Aponjon* to ensure long-term sustainability. Their ideal model would derive more funding from user fees (40%) and rely on development agencies for just 20% of funding. In addition, Dnet aims for local CSR, advertising and the Sponsor-a-Ma campaign to contribute much more to its financing in the future.

Subscriber fees

During the pilot phase Dnet established three tiers of service charges depending on the subscribers' socioeconomic status – free for the ultra-poor, discounted price (1 taka or 1 US cent per message) for the poor, and paid service (2 taka or 2.5 US cents per message) for subscribers with a slightly higher socioeconomic status. A subscriber was determined to be eligible to receive the service for free, at a discounted price or for full price by an algorithm

FIGURE 8.
Current Funding Structure

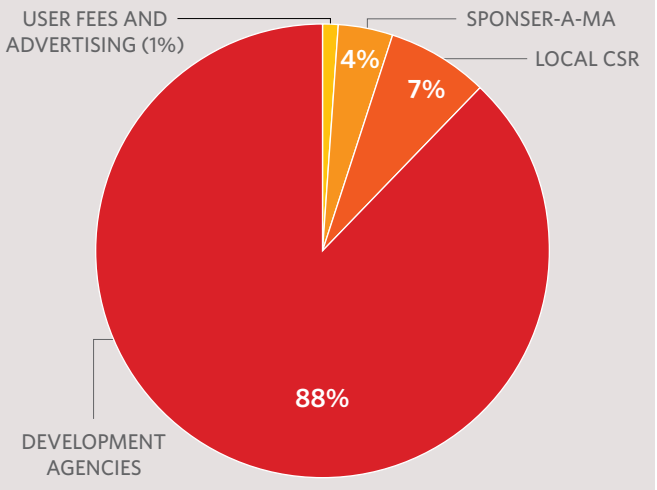


FIGURE 9.
Future Funding Structure

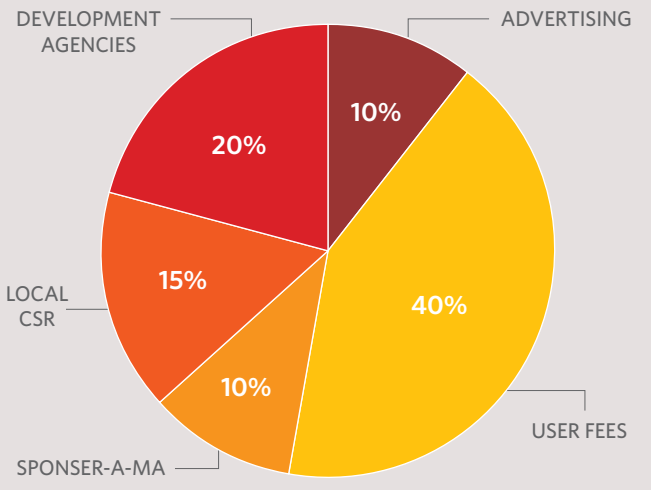


FIGURE 10.
Formative research payment tiers [13]

Payment status (amount includes tax)	Percent and number of subscribers assigned
Full pay (2.3 taka*)	57%
Discounted pay (1 taka)	26%
Free status	17%

*including tax



FIGURE 11.
Formative research registration data on willingness to pay among pregnant women and new mothers [13]

	Pregnant women and new mothers	New mothers
Willing to pay any amount for the service	7%	8%
Willing to a pay a small amount	76%	66%
Not willing to pay	9%	13%
Missing	7%	13%

using demographic information. Over half of the formative research respondents were qualified to pay for the service (57%), while just 17% were eligible to receive the service for free.

According to the formative research, out of 300 subscribers registered through BRAC, 44% had incomplete SES data. Incomplete data can be attributed to a number of factors, including failure on the part of CAs to disclose pricing information during registration and low literacy levels of CAs impeding their ability to correctly fill out the registration forms. Dnet has since implemented a variety of changes to ensure that the forms have more complete SES data- including the refresher training of CAs, and hiring of BPs.

Willingness to pay was assessed at two points during formative research — at registration and during phone surveys post registration. At registration, 349 pregnant women and 575 new mothers were surveyed. A very small portion of these pregnant women and new mothers reported being willing to pay "any amount" for the service, while the majority said they were willing to pay "a very small amount."

The second round of research conducted via phone survey did not disaggregate respondents by payment tier and instead assumed that they were all paying full price for the service. Therefore the analysis of this data must also assume that all respondents were paying the full rate. Almost half (45%) of female subscribers paying to receive IVR said the service should cost less than one taka per message, and about one-third (31%) said it should cost between one and five taka per message.[14]

Of the husbands and family members paying to receive IVR messages, 42% reported that they think *Aponjon* should charge two taka per minute, while almost half (46%) said it should charge between two taka per minute or higher. It is interesting to note that just 11% of female subscribers pay for the service themselves, while almost 90% of gatekeepers paid for the service themselves. As such, subscribers that directly paid for the service were willing to pay more for it, while subscribers who depended on others to pay for the service were less willing to pay for it. Currently, Dnet strives to provide *Aponjon* free service to the poorest 20% of subscribers.[15]

The formative research conducted on willingness to pay revealed a number of issues regarding outreach partners and CAs. Outreach partners and CAs varied widely in their explanation of

One of the lessons learned by Dnet in this regard is that transparency during the enrollment process is paramount to obtaining trust of subscribers in the program.

FIGURE 12.
Phone survey data on willingness to pay [16]

How much should the service charge per minute on IVR?	Pregnant women and new mothers	Household decision makers
<1 taka	45%	19%
1 taka	26%	32%
2 taka or higher	31%	46%

the cost of the service to clients and even enrolled subscribers that were not aware that they were being enrolled in the service. Dnet learned during site visits that some CAs did not visit community members before enrolling them in the service but instead used data collected at outreach offices to fill out or partially fill out registration forms to enroll subscribers. This not only affected data quality but raised ethical issues. As such, one of the lessons learned by Dnet in this regard is that transparency during the enrollment process is paramount to obtaining trust of subscribers in the program. If subscribers are unaware or under-informed of the costs this may result in dissatisfaction and distrust of the program and of CAs. Dnet has remedied this situation by focusing on CA training, hiring BPs and through continuous and strategic monitoring. In addition, *Aponjon's* sign-up sheets now feature a checkbox for subscribers to tick that says they understand the pricing and all other conditions of the service specifically.

Advertisement revenue in IVR: a new channel

Aponjon currently generates limited revenue from advertisements in voice messages. Findings from content surveys suggested that the subscribers were willing to receive product advertisements along with the service. The benefits to commercial organizations of advertising in the IVR messages include: reaching their target audience, directly accessing a new customer base (reaching customers who were not otherwise accessible), gaining insights through access to *Aponjon's* rich user database, increasing customer loyalty and fulfilling CSR requirements. *Aponjon* currently advertises for SMC's product Monimix, a government-endorsed micronutrient for children older than six months.

Performance Monitoring Plan | 8.

To monitor the implementation and effects of *Aponjon*, a series of systems and activities were instituted, which are documented in *Aponjon's* performance monitoring plan (PMP). The PMP provides the framework for generating timely, relevant information for managers for evidence-based management decision-making. It outlines approaches for tracking progress towards programmatic goals and targets, and details methodologies for measuring change in MNCH-related knowledge, attitudes and practices. The PMP includes mechanisms that highlight potential problem areas, and establishes a reporting feedback system for all levels of the program.

The PMP breaks down programmatic goals into specific output and outcome indicators. Output indicators relate to process-type activities associated with program implementation and related outputs. The outcome indicators rely on periodic surveying methodologies to measure preventive and care-seeking knowledge, attitudes, and practices of subscribers.

The Dnet team has adopted a unique approach to measuring KABP outcomes by instituting three layers of research methodologies. Two methodologies are carried-out periodically by in-house Dnet researchers, and the third is a robust external evaluation which is being conducted by icddr,b.

Dashboard and monitoring project outputs

For the output related data, the Dnet team uses an online dashboard that provides graphical presentations of system generated data in real time. To support progress review, troubleshooting, and other management tasks, two main types of indicators are currently displayed via the dashboard: status and performance. Status level indicators track the type of subscriptions and whether they are current or cumulative. Performance indicators track the subscription rates by type of user, type of registration (assisted or self-registration) and within geographical areas of Bangladesh. Figure 13 below provides an examples of graphs on the *Aponjon* program dashboard.

FIGURE 13.
Examples of graphs on the Aponjon program dashboard



Measuring change in knowledge, attitudes, behaviors and practices

The PMP's outcome indicators relate to specific knowledge, attitude, behavior, and practice (KABP) changes that Dnet expects to effect through the *Aponjon* service. The Dnet team has adopted a unique approach to measuring KABP outcomes by instituting three layers of

The first three phone surveys found *Aponjon* subscribers to be twice as likely to have attended four or more antenatal care visits, 16% more likely to have had a facility-based birth, and 19% more likely to have exclusively breastfed than the national BDHS average.

research methodologies. Two methodologies are carried-out periodically by in-house Dnet researchers, and the third is a robust external evaluation which is being conducted by icddr,b.

The first, most frequent and lowest cost methodology is a quarterly phone survey carried-out by call center agents to subscribers. The phone survey questionnaire is relatively quick, only lasting about 10 to 15 minutes to administer. Participants are asked a series of questions that test their knowledge on certain topics, explore the source of knowledge when demonstrated and follows-up with questions regarding household practices adopted and facility-based services attended during their pregnancy and after birth. The phone surveys have small samples, due to low participation rates, with initially 60 respondents per round in 2013, but now include 120 respondents per round.

The first three periodic phone surveys carried-out between 2012 and 2013 revealed significantly higher percentages of *Aponjon* subscribers reporting adoption of healthy behaviors as compared with national averages captured in the 2011 Bangladesh Demographics and Health Survey (BDHS). There is no baseline data of KABP levels prior to the service and since the BDHS is recent and covers many MNCH-related practices relevant to *Aponjon*, program managers found the BDHS to be a cost-effective comparator for the phone survey findings.

As the table below reflects, the first three phone surveys found *Aponjon* subscribers to be twice as likely to have attended four or more antenatal care visits, 16% more likely to have had a facility-based birth, and 19% more likely to have exclusively breastfed than the national BDHS average.

The phone surveys also revealed over 97% of respondents said they have already recommended *Aponjon* to others. When asked about how well they trusted the messages, respondents revealed high levels of trust — on a Likert scale of 1 to 5, with 5 being the highest, 94% said they would rate it as either 4 or 5.

The phone survey findings are validated by findings from a more robust annual household survey, called the Sample Survey. The Sample Survey covers the same KABP questions as the phone surveys, plus additional questions for more breadth and depth of understanding on the effects of the service on subscribers. The Sample Survey questionnaire takes between 30 – 45 minutes, thus the household survey approach is more appropriate for that length

FIGURE 14.
Aponjon Subscribers vs. 2011 BDHS Results

	Aponjon Subscribers (N = 180)	2011 BDHS Results
Attended 4+ ANC visits	66%	32%
Had a facility-based birth	45%	29%
Exclusively breastfed	82%	64%

than a phone survey would be. The Sample Survey is also used to explore additional topics pertinent to program managers, such as changes in phone ownership. The first Sample Survey was conducted in 2013 with 476 respondents and the 2014 survey is planned to have 1470 respondents. Results of the first Sample Survey are expected to be released in mid-2014.

The phone surveys also revealed more than 97% of respondents said they have already recommended Aponjon to others.

External evaluation by icddr,b

An independent impact evaluation of the Aponjon program is being conducted by icddr,b through USAID's Translating Research into Action (TRAction) project. The icddr,b (International Centre for Diarrheal Disease Research, Bangladesh) is an international health research organization in Dhaka, known for developing Oral Rehydration Solution in the 1970s. The *Aponjon* evaluation employs both qualitative and quantitative research methods in four different geographical areas of Bangladesh, with diverse contextual characteristics.



Specifically, the evaluation has been designed to answer the following research questions:

1. Does the *Aponjon* program have a positive impact on a mother's antenatal and postnatal care practices?

2. For those women who adhere to the *Aponjon* recommendations, do they have a positive impact on their health, and the health of their child?

3. What aspects of the messaging are most effective in prompting women who are enrolled to take action?

Due to the complexities of community-based healthcare delivery in Bangladesh, the kind of facility-based research carried-out in other countries would not be appropriate here. Dr. Elahi, the Principal Investigator, and his team of researchers have designed an extensive evaluation study where the quantitative component includes a household survey with a subscriber/treatment group and a control group to understand if the *Aponjon* subscribers have a statistically significant higher propensity for specific behaviors and practices promoted through the service than the control group.

The qualitative phase of the study was completed in 2013, and explored the facilitating factors and barriers in relation to accessibility, acceptability, affordability and utility of the *Aponjon* intervention. Findings from the qualitative research were used to guide the development of quantitative data collection tools.

The quantitative component is still underway, with the household level data collection expected to commence in mid-2014. To examine the effects of *Aponjon* on outcome KABP indicators retrospective observational study with propensity score matching (PSM) is being utilized. In each study area, a sample of study population from subscribers of *Aponjon* (treatment group) and non-subscribers (control group) will be selected. Data will be collected in two phases. In phase I, a sample (treatment and control) of the study population (520 in each group) will be selected based-on selection criteria (for each within 6 months and 7-12 month post-partum). In this phase, background information of the sample population will also be collected and analyzed for PSM. In phase II, all the best-matched selected subjects will be interviewed using the structured questionnaire for their accessibility, engagement to *Aponjon* intervention including the information for process and outcome indications. To get the required sample (i.e. 1040 in total) it is estimated that about 54,000 households will have to be visited.

This study also seeks to address the current gap in empirical evidence globally of the effects of MNCH mobile messaging programs by exploring the accessibility, acceptability and effectiveness of the *Aponjon* intervention by end-users. Icddr,b intends to share the results of this seminal research nationally and internationally.

Conclusion

In the year and a half since its official launch, *Aponjon* has reached half a million mothers and their families with vital health information through mobile technology, and strives to reach three million in three years. This tremendous accomplishment is due to the hard work, dedication, talent and innovative thinking of the consortium of partners at the country and global level that make up *Aponjon* and MAMA.

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Dnet has overcome challenges related to low female literacy, low female phone ownership and diverse preferences from urban and rural populations by leveraging a highly complex technical platform and conducting robust formative research. Dnet is working towards achieving long-term sustainability of *Aponjon* by developing and executing a strategic business plan. *Aponjon* is on its way to achieving scale and impact via the exceptional work of Dnet, strong partnerships with the highly involved government of Bangladesh, five mobile network operators, three corporations, and six outreach partners.

From reaching culturally diverse populations in Chittagong and Sylhet by recording local dialects, to increasing efforts to provide the service free of charge to the poorest subscribers by targeting remote areas, to working to extend the messages through early childhood, *Aponjon* is committed to serving women and families in Bangladesh who most need access to vital health information.



Endnotes

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10 Ibid.

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12 The two different options to charge for mobile messages are mobile originated (MO) and mobile terminated (MT). People are generally are only charged for messages or calls they initiate, so many operators only have the ability for MO charging. Aponjon pushes voice messages to users' phones, which means that they are MT messages, but (some) users are still required to pay for them. Because some of the operators can't do MT charging they've set up a subscription process where people are billed weekly instead of per message.

13 Dnet and Johns Hopkins University Global mHealth Initiative, 'MAMA 'Aponjon' Formative Research Report' December 2013.

14 Ibid.

15 Ibid.

16 Ibid.



MAMA Mobile Alliance for Maternal Action

Visit MAMA's website to learn more about our impact and initiatives:
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