

## Putting mobile communications to work

CycleTel™ – Empowering women using SMS mobile phone messaging  
ThoughtWorks' Social Impact Program is putting mobile communications to work by getting critical reproductive health messages out to millions of women in developing countries.



The Institute for Reproductive Health (IRH) of Georgetown University empowers women worldwide by helping them take charge of their reproductive health. In 2001, IRH created a fertility awareness-based family planning method known as the Standard Days Method® (SDM). It's a straightforward and low-cost method based on avoiding unprotected intercourse on 12 specific days around the middle of a woman's menstrual cycle. Used correctly, SDM is 95% effective, comparable to other current user-controlled methods for preventing unplanned pregnancy.

Studies show that SDM has wide applicability and is culturally acceptable in a wide range of developing countries, and is directly addressing the global challenge of unmet need for family planning, which burdens 200 million women worldwide. Given that it takes significant commitment to work through national public health programs to integrate SDM into routine service delivery, IRH researchers are exploring avenues to offer SDM directly to consumers so as to expedite the rollout and adoption of SDM. As a knowledge-based family planning method, SDM does not necessitate a visit to a health clinic or even contact with a community health worker. To use SDM, a woman simply has to learn about the method, answer a few questions to see if the method is appropriate for her, and learn to follow a simple set of instructions each menstrual cycle—all of which has been proven manageable for women of varying levels of literacy worldwide.

### Highlights

CycleTel facilitates the use of an effective family planning method via SMS, and is designed to:

- Allow users to opt into or out of the application using a set of designated keyword commands;
- Screen each new user with a series of messages to determine if the service is appropriate for her;
- Alert each user of her "unsafe days" each cycle, and remind her to send in the date of her period each cycle;
- Track a woman's cycle length over time to ensure that SDM continues to work for her;
- Operate at scale for continual, long-term use until the user chooses to discontinue use.

### Technology

Python  
Django  
Kannel SMS Gateway

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### Using mobile phones to put SDM in women's hands

Researchers at IRH India's Country Office felt that an opportunity existed with SMS (mobile phone) text-messaging as a way to directly reach women in need of family planning. Mobile phone use is already high, and growing, in the developing world. A three-phase study was conducted in 2009 in Lucknow, in the states of Uttar Pradesh in India, to see if mobile phone text-messaging would be a viable way to enroll, advise and support women who want to use SDM.

The study was conducted with women and men in focus groups, then in interviews, and finally in a two-cycle trial with women who received text messages advising them of days when it was unsafe to have unprotected sex. It proved that text-messaging would be an effective way for women to use the method, and also pointed out practical and social issues for use.

### Tailoring the messages to the market

Feedback was gathered on the phrasing for the messages sent to women on fertile and non-fertile days. It turned out that the women and their husbands preferred to be informed in Hinglish (Hindi, written in the Roman alphabet), which is widely used in India and avoids character set issues with text messaging services. The wording of the messages to alert women of fertile days was changed from "fertile / non-fertile day" or "can / cannot get pregnant" phrases, to the terms "safe / unsafe day" instead (in Hinglish), which protected confidentiality and were more socially appropriate.



Phone showing Message "Unsafe Day" in Hinglish

The study showed that help-line support would be important to go along with the text messaging service, which is now called CycleTel. It was also found that couples were willing to pay a small amount each month for the service, necessary to make it sustainable and scalable, both of critical importance to IRH's objective.

### SMS + WASPs + Python: Navigating complex technology to build CycleTel

From the Uttar Pradesh results, IRH refined the CycleTel concept and began looking at how to get the product built. With extensive expertise in the medical and sociological aspects of the concept, the IRH team now needed a partner who could not only build the application but who could also help navigate the complex world of Wireless Access Service Providers and the Indian Telcos—all requisite elements to launch the product. Ultimately, at a mHealth conference in late 2010, the IRH team was referred to ThoughtWorks.

With a few meetings over a space of several weeks, team members of ThoughtWorks' Social Impact Program put together a detailed proposal for the CycleTel project that met all of IRH's requirements.

### Two-week QuickStart sets the pace

IRH quickly decided to move ahead, and the project kicked off within weeks, in mid-December. A team of ThoughtWorkers in Chennai, India, was joined by IRH Program Officer, Meredith Puleio, from Washington, DC and IRH India Country Representative, Priya Jha, from New Delhi for a two-week QuickStart. In the space of two weeks, the team identified application scope and detailed requirements, creating a card wall of user stories that encompassed the different discrete functions that the completed product needed to perform. Despite the disparity of backgrounds and expertise, the meetings not only built team relationships but sparked creative thinking about the requirements.

Working from the card wall, the team set out an initial development schedule. The team also mapped out the functional technologies needed to support the application and business relationships that would be needed, such as a hosting provider, support arrangements, SMS gateway provider, and the wireless Telcos. These would be addressed in parallel with application development itself.

### Twelve weeks from concept to product

Once the QuickStart was completed, Meredith and Priya left Chennai, and the team began development, using the Python/Django application platform. Weekly WebEx showcases of the

“It was clear to me that what we had here was not an ordinary client/contractor relationship. Instead, we effectively formed a synergistic partnership that combines our distinct skills to innovate for social good.”

Priya Jha, Country Representative

work were conducted between the developers in Chennai and IRH team members in Washington, D.C. and Delhi so that everyone could see the product and check progress against the plan.

Part of the way into the project, IRH requested to extend the schedule a few weeks to allow for results to come in from another CycleTel formative research phase in progress in Delhi. ThoughtWorks accommodated the change, adjusting the team resources to extend the work schedule. Even with a few weeks added to the plan, the entire project was completed in just twelve weeks. Refer to the "highlights" section on page 1 to read how the application works.

The application collects data in real-time, stored in one central database, accessible to researchers and project managers at any time from any computer connected to the internet. Provision is also included for round-the-clock application management, network monitoring, and customer support. These built-in monitoring and evaluation systems allow IRH to ensure that CycleTel is in fact offering a valuable family planning service to users.

### Empowering women across India, and beyond

CycleTel was deployed in April 2011 with a select group of women, and IRH and ThoughtWorks are closely monitoring how the technology is working. Additionally, IRH is in the process of enrolling 500 women to participate in a "Test Market" for CycleTel. Results of this research phase will inform future releases of the software, which will be adapted to include more features, such as message frequency and language preferences. Simultaneously, IRH is also exploring partnerships with telcos and other donors to ensure sustainability of CycleTel in India and to be able to launch CycleTel in other countries.

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“ThoughtWorks was quick to understand what we were looking for, and that this was going to evolve over time. We were impressed with the depth of the proposal ThoughtWorks put together in just a matter of days.”

Victoria Jennings, IRH Director



“Before I arrived, I wondered how in the world I was going to translate ‘family planning’-speak to a room full of software developers, in India no less. But at ThoughtWorks’ Chennai Office, I walked into an environment that breathes innovation, collaboration, curiosity, motivation, efficiency and well-honed problem solving skills.”

Meredith Puleio, IRH Program Officer.