unicef
unite for children

10 YEARS DEF
DIGITAL EMPOWERMENT foundation

Mobile Phones:
A TOOL FOR SOCIAL & Behavioural Change

A Review of Case Studies

2013 I New Delhi

Mobile Phones:
A TOOL FOR SOCIAL & Behavioural Change

This paper has been written by Syed S. Kazi & Ritu Srivastava and reviewed by Osama Manzar, Alka Malhotra & Rachana Sharma

Contact us
Alka Malhotra
amalhotra@unicef.org

Osama Manzar
osama@defindia.net

Published by:
Digital Empowerment Foundation
House No. 44, 3rd Floor (Next to Naraina IIT Academy)
Kalu Sarai, (Near IIT Flyover)
New Delhi – 110016
Tel: 91-11-26532786 / Fax: 91-11-26532787
URL: www.defindia.net

Content

Acknowledgement

With more than 850 million subscriptions and the mobile density at 70 per 100, the humble mobile has emerged as the single most powerful technology enabler and equalizer tool in addressing traditional information and communication bottlenecks in India. With this, the connectivity and access landscape has been redefined with significant impact in social and economic processes. If the increasing mobile network, access and services have transformed the way we transact, trade and exchange in-commerce and business, the mobile has also turned into a "social object" raising social and behavioural change trends among underserved groups like youth, women, scheduled castes, tribals and others including below poverty line population.

In the process, mobile has increased convenience, better access to information and streamlined access to social and economic entitlements. The increasing mobile density has provided an unprecedented opportunity to bring desired change impact in critical areas of education, health, and livelihood and disaster management through specific methods in *information dissemination, training and interpersonal communication, and monitoring and tracking of programmes.*

This research titled, *"Mobile Phones: A Tool for Social & Behavioural Change,"* is developed by Digital Empowerment Foundation with the support of UNICEF in India, is a work in holistic approach to understand the scope, magnitude and learn from experiences of how mobiles are emerging as viable tools, devices and platforms to meet vital development and governance objectives through desired social and behavioural changes (SBC). UNICEF and DEF also conducted a two-day multi-stakeholder consultation on "Use of Mobile Phones for Social & Behaviour Change on May 9-10, 2013) in New Delhi, where 12 relevant cases were brought in and all aspects of SBC discussed, including the draft research report of this final report in your hand. With the recommendation of consultation, we have finally divided the entire research report into three parts, one with case studies discussion, second with complete compendium that includes full research paper, cases and the excerpts from the consultation; and the third part is the executive summary of the full report..

The undersigned seeks to acknowledge the wholehearted support of UNICEF in India to undertake this assignment on mobiles for SBC and accomplish key tasks in given time. My sincere thanks and gratitude to the UNICEF Team in India led by Paolo Mefalopulos and supported by invaluable colleagues including Alka Malhotra, and Rachana Sharma in completing the research compendium. The support of UNICEF station team in Madhya Pradesh, Bihar, Jharkhand and Andhra Pradesh are sincerely acknowledged for their valuable contribution.

Sincere acknowledgement goes to the entire 12 case study presenters during consultation from different parts of India for sharing valuable mobile for SBC experiences and thereby enriching the consultation process and outcome. Thanks and gratitude to the distinguished speakers, delegates and attendees whose valuable participation added the much required value addition to this research paper.

At DEF, I sincerely acknowledge the valuable support and contribution of the core team Ritu Shrivastava, Chitra Chauhan and Syed S. Kazi in completing the consultation and research with due diligence and sincerity.

Readers kindly note that the outcome of the consultation is shared in 3 documents – A White Paper, A Working Paper and A Case Studies Review Paper, all pertaining to wider mobiles for social and behavioural change status, scope and challenges.

Readers may ignore the errors and mistakes, if any, as human error and as unintentional.

Wish you a happy reading!

With sincere regards

Osama Manzar

New Delhi, 2013

Introduction

With more than 800 million mobile subscriptions and still counting India has emerged as one of the largest mobile phone 'test bed'. This is not without significant social, cultural and economic ramifications. The size of a subcontinent together with the status of the second most populous nation in the world has led to this technological advantage. With this there is the promise of enormous opportunity for growth and development riding on the ever expanding horizontal mobile network.

The social advantage from mobile has been manifold. The invisible social 'revolution' is happening and still churning transformations yet silently. The power of mobile as the new "social object" has determined big and small impacts in the lives of millions. This new mode of social connectivity and mobility has redefined and reworked new forms of social-political and economic processes with the spread of "anywhere, anytime" communication infrastructures. There are today new modes and linkages to seek for social and economic entitlements as augmented by the mobile technology. The broad consensus is around mobile's power to trigger new form of social identity, including cultural, political and economic identities. Sociologically speaking, mobiles have dismantled traditional information hierarchies The mobile led social empowerment has been inclusive. Mobile culture has led to a 'culture of uniformity'; mobile culture is 'egalitarian culture'.

The expanding social space of mobile has invited keen attention on the new thematic area of social and behavioural change (SBC) having essential link with communications for development. There are new trends in looking at personal behavioural change over a period of time as reflected in attitude, level of confidence building, opinion creation, articulation in expression, and so on around subjects and issues. This is further linked to interpersonal behavioural led changes due to mobile connecting two groups of people, two individuals, and so on overcoming physical and distance barriers. The new found opportunity to share information and communicate in shortest possible time through mobiles has pushed towards a 'communication revolution'. The sharing of content, knowledge and experiences has found a new window of opportunity which was unthinkable a decade back. With a 'personalised' device, there is new freedom and lib-

erty to inform and communicate and new method to strengthen personal, familial, social and economic relationship.

The widening social relevance of mobile has inspired mobile innovations and ideas into project experiments using mobile technology in the form of medium, platform, device and carrier. Mobile projects more in pilot forms have been launched with focus on education, health, livelihood, and environment. The experiments have been largely driven by social and development needs spearheaded by civil society and bilateral agencies supported by public and private partners in many instances. These projects have been identified to focus on key mechanisms to deliver needs and services using mobile platform – information dissemination, interpersonal communication, training of frontline workers, monitoring and tracking of projects.

The pilot case studies have raised key questions that emerge in the background of the mobile revolution in India. How real is the mobile emergence in India and how inclusive? Is profit motive determining social drives in mobile? How egalitarian has been this expansion providing a level playing field for all? How the policy gaps are perceived and attempted to be raised and addressed? Does the pilot programmes gives sufficient learning to address issues in improvisation and scaling up projects? How to define and understand the increasing opportunity in mobile space in terms of partnerships and collaborations to bring in desired social and behavioural gains? Is the country ready for a new social change through widespread mobile enabled social transitions?

Irrespective of the contemporary challenges in the mobile space, the scope and opportunities outweighs the limitations which are not insurmountable. There is tremendous space for everyone to work together and serve their constituents. The critical challenge perhaps is to understand the social, cultural and economic contexts of mobile applicability. What is promising is mobiles can accelerate desired social and behavioural changes among millions which in turn provide much needed social stability for sustainable economic activities.

2. Review of Case Studies

Mobile innovations are delivering home-grown solutions worldwide and have shown promising results in India, transforming connectivity and access scenario, social and development processes and driving inclusive development and growth. The mobile access is quickly changing lives, driving governance and service delivery, fuelled in part by collaborative efforts, and delivering innovation and localisations in solutions. Together with Internet, mobile phones are transforming the development landscape, injecting new dynamism in key sectors as exemplified by various pilot efforts.

A review of 12 mobile case studies for this paper indicates the most common sectors for social investment are education, health, socio-economic development, and disaster management. The pilot initiatives have highlighted two essential points. One, mobiles have emerged as effective mechanism to derive project impacts in – information dissemination, training of frontline workers and interpersonal communication practices, and project monitoring / tracking. Second, mobile projects calls for inclusive agenda among stakeholders in multi-stakeholder partnership mode.

2A. Mobiles for Information Dissemination

Information dissemination is a proactive information service designed to educate and inform focused groups of users on social, economic and educational issues, problems, and opportunities of interest to them[1]. It requires systematic planning, collection, organization, and storage of information for its delivery to the target audience using different media and communication means[2]. The importance of information dissemination is in raising the social and economic status of focused groups including their survival and self-development through need based technical skills and educational programmes.

With more than 800 million mobile subscribers in India, mobile phones are certainly emerging utility tool for information dissemination. The efforts towards information dissemination finds greater resonance in mobiles as instrument of information decentralisation and most democratic information channel that capture mobility-specific requirements cutting across cultures and geographies.

A review of select case studies of mobile applications in information dissemination as described below brings out key essential areas for consideration and follow ups:

[1] *Basics of Information Dissemination, http://www.unesco.org/education/aladin/paldin/pdf/course02/unit_05.pdf*
[2] *Ibid.,*

2A. Case Study 1

Project Name: "Chala Skul Ku Jiba" (Let us go to School)

Organisation: Radio Namaskar

Location: Puri District, Odisha

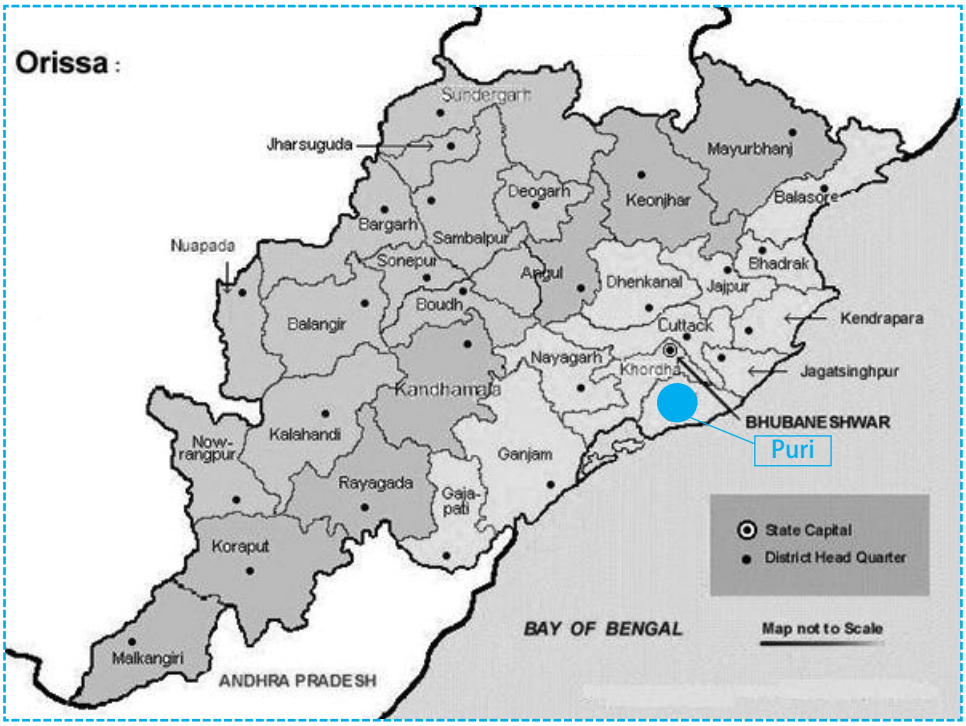
Project since: 2010

Project URL: http://radionamaskar.org

Description:

"Chala Skul Ku Jiba" (Let us go to school) is an initiative of Radio Namaskar, a community radio FM station. The project, initiated in 4 blocks and surrounding areas in Puri District, Odisha, seeks to enrol school dropouts back to school. During situation analysis and listeners survey Radio Namaskar got regular feedbacks on massive dropout of school students especially girl students. To stop this trend, Radio Namaskar decided to start a new radio programme covering 72 listeners group. The first initiative was taken in July, 2010.

To this effect, jingle was produced, broadcasted to motivate the parents to send their children to school. In the first month, the response was poor and not encouraging. Subsequently, a dedi-



cated mobile number was announced dedicated to the purpose. Interestingly, the response of listeners started growing each day. But it was one way communication. Respondents were informing the studio regarding the dropout students of their locality which was broadcasted through the community radio. Subsequently, software was integrated with radio programme through which a listener can ring anytime to the dedicated mobile number and can tell her/his view. Through this software and GSM gateway the dedicated mobile number (9040904904) for the listeners was spread. Now, when any listener rings the mobile number an automatic voice command goes to the dialler with request to inform regarding dropout students in their village/locality.

In this process the initiative took shape of a campaign and Radio Namaskar started broadcasting a special radio programme package of 30 minutes twice a week. Listeners started informing regarding dropout students from their mobile phones to the dedicated mobile number (through call and SMS). The recorded and SMS information were broadcasted through Radio Namaskar in special episodes. Further, live teleconference was conducted with listener, local school teacher/headmaster, school authority, local Panchayati Raj Institution (PRI) representative, school management committee members/ leaders etc. When the dropout student/s returned to school thanks giving SMS were dispatched to all the mobile numbers in the database of the Radio. The reason is to spread the good news with other listeners and citizens on the impact of a phone call/SMS which gives life (education is life) to a child.

Result: So far with the above processes 165 schools in 4 blocks (Gop, Nimapara, Astarang and Kakatpur blocks) in Puri District declared as ZERO DROPOUT SCHOOL by the local administration.

Project Strength, Weakness, Improvisation & Scalability

1. The project 'Let us go to School' involves the participation of the community to a great extent especially the listening community of Radio Namaskar Community Radio. There are 72 listeners groups that aided the project. The project is decentralized in nature and has wide space of community participation, inputs, response, feedback and engagement.

2. The project has already been implemented covering 165 schools, which mean it is a scalable project.

3. Project like this is about hyper locality (serving local community in dedicated manner) that needs scalability

4. The project has scope and relevance in partnership with other localized zones. Partnership with government departments like education will be a value addition and help in scalability.

5. There should be incorporation of offline follow-ups. Community ownership needs to be moderated.

2A. Case Study 2

Project Name: MHSM SMS Toolkit

Organisation: Datamation Foundation

Location: Kanpur Dehat (Rural) District, Uttar Pradesh

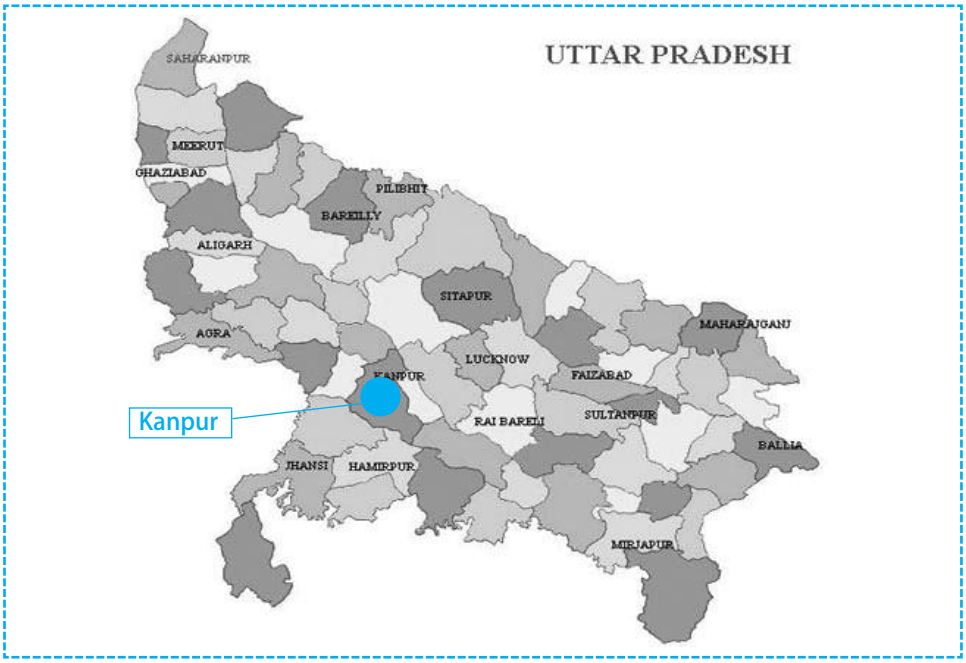
Project since: 2010 – 2012

Project URL:
www.datamationfoundation.org

Description:

The project Maternal Health Services on Mobile (SMS Toolkit) – MHSM, aims at providing critical Reproductive and Child Health related information services to the pregnant and lactating women apart from their families and health workers through mobile phones, using localized SMSs in Hindi. Two messages per week have been created for 40 weeks of the pregnancy (norms as per government programmes). Along with more general, reinforcement messages on nutrition, specific messages pertaining to the week of pregnancy like ante natal check-up; vaccines, Iron folic supplements and movement of baby are sent to the registered women.

The SMS toolkit allows direct sending and receiving SMS from an ordinary PC or laptop at a very low cost. Unlike standard SMS project which rely on an automatic registration process, or standard SMS projects which have



generic messages, the registration of women has been done manually preceded by a strong community mobilization, linking with existing health workers like Accredited Social Health Activist (ASHA), Auxiliary Nurse Midwives (ANM) and Dai. This process of manual registration has allowed the project to: involve the community at large, including important stakeholders like husbands and other family members of the pregnant women and gain their acceptance for the project; build links with existing health infrastructure and workers; and promote the project and create a buzz.

The project was implemented at 4 primary and 5 other neighbouring villages which are some of the most backward villages of the Katari cluster in the Ghatampur block of Kanpur Dehat (Rural) District of Uttar Pradesh. The project is implemented by Datamation Foundation Trust, a Community Organization working in the domains of Health Care, Livelihoods and Education. One World South Asia (OWSA) and Microsoft are technical partners in this project. The content was provided by ZMQ technologies.

Result: Over 1000 pregnant and lactating women apart from their families and health care workers are impacted so far. A total of 3171 pregnant women were registered for the SMS service during project period. Further, 2206 after child birth registration were registered for post natal SMS services.

Project Strength, Weakness, Improvisation & Scalability

1. The project 'MHSM Toolkit' has enabled circulation of critical health information resources regarding reproductive and child health directly to the pregnant and lactating women through mobile phones, using localized SMS in Hindi. Information service in local language has added value to the project and in direct impact upon the focused group.

2. The project is community centric in design and involves participation of focused groups.

3. The project has scope for collaboration. Collaboration with government will be beneficial; Scale up can be done through government funding or sources like Member of Parliament or Member of Legislative Assembly local funds.

4. Regarding improvisation, this project should be supported by automated IVRS system. There should be a means of direct registration for SMS service by the family or pregnant woman rather than waiting for the ASHA worker as intermediary.

5. Project ex post research is necessary to find attributes from the impact of SMS services upon focused groups.

2A. Case Study 3

Project Name: Kisan Sanchar

Organisation: Srishti Gyan Kendra

Location: Rohtak, Haryana

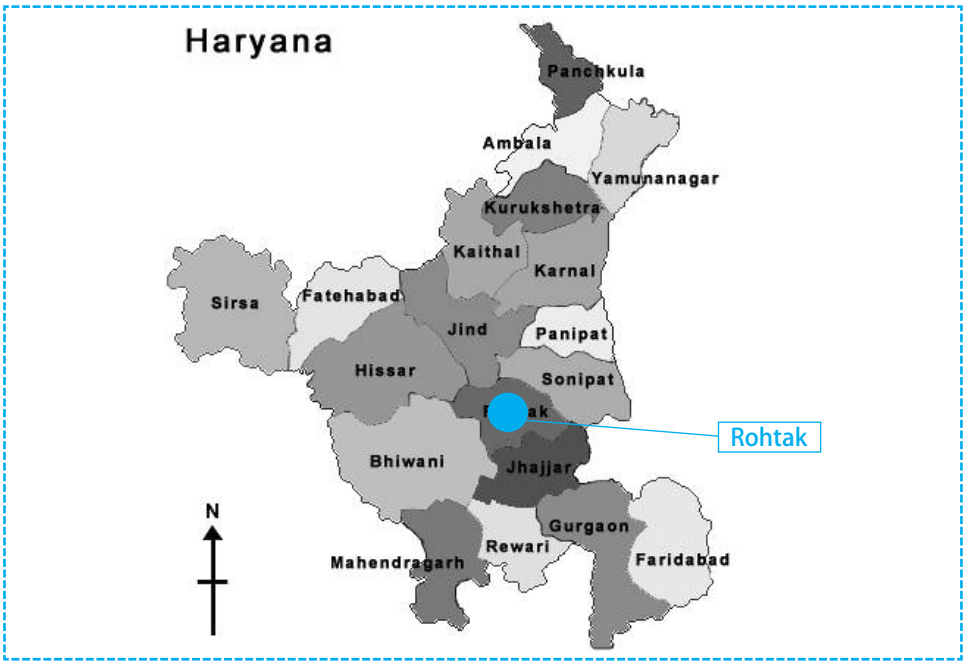
Project since: 2010

Project URL:
www.kisansanchar.com

Description:

Kisan Sanchar is an interactive platform for scientists, agricultural experts, institutions for sharing their technology and knowledge with the registered subscribers i.e. farmers who have willingly opted for the mobile information service. The knowledge is shared in Hindi language in text as well as voice format. It is an enterprise based communication platform to broadcast text and voice messages on the mobile phones of individual farmers. It enables its users (which are mainly agricultural experts and institutions) to send personalized and interactive outbound text and voice messages at the touch of a button.

Farmers register themselves voluntarily to Kisan Sanchar by contacting project volunteers and by making a missed call on a dedicated mobile number 9812430006. The call is automatically disconnected after one ring and number is registered on the database. Farmer's membership is confirmed by



delivering a text message on his mobile phone.

Kisan Sanchar delivers free of cost knowledge content developed by Krishi Vigyan Kendras and various Agricultural Universities in form of text & voice messages to the member farmers registered with Kisan Sanchar through Krishi Vigyan Kendras. Approximately 33066 farmers from seven states of India (J&K, Himachal Pradesh, Punjab, Haryana, Delhi, and Rajasthan & Gujarat) have voluntarily opted for the services of Kisan Sanchar through various Krishi Vigyan Kendras and are being benefitted from free of cost the services.

Result: Launched with full effect on 1st September, 2010, the project since then has broadcasted around 1500 messages to approximately 33066 farmers in 7 states (J&K, Himachal Pradesh, Haryana, Punjab, Delhi, Rajasthan & Gujarat). Kisan Sanchar launched its Voice Messaging on 19-2-2011 in the state of Gujarat. It has covered 140 districts in North India.

Project Strength, Weakness, Improvisation & Scalability

1. The project 'Kisan Sanchar' through mobile phones bring agri-extension information services to farmers for better agriculture practices and also promotes environment friendly impact through organic practices. It is a cluster based approach focused on the farmers' community exclusively.

2. The project is considered to have potential, as it has already covered 140 districts in North India. Technology and program are both scalable.

3. It needs to improvise on larger database management and number of people to be served. As of now volume of data is not manageable centrally. Local language support and reply options on mobile not available. Help line facility in each state is a need area.

4. The means of scaling up would be collaborating with diverse set of agencies. Also the project is required to collaborate with research institutes to generate knowledge resources for further dissemination.

5. The project sustainability is an area of concern in medium and long term. The free of cost delivery of information to farmers involves sending SMSs which has a cost implication for Kisan Sanchar to purchase SMS service from service provider.

2B. Mobiles for support to Frontline Workers & Interpersonal Communication

The frontline workers are an important part of the bottom-line, in project delivery outcome and impacting beneficiaries in desired way. Training of workers is an important strategy for improving workers' productivity in allocated work field. Use of mobile technology has emerged as relevant and efficient tool to train the work force and achieve desirable project impact. For instance, through activities like mobile phones capturing complex data on pregnant women and children, and women receiving SMS text reminders before their 'due' dates, mobile phone based training for health workers can streamline and enhance the quality of maternal and child health services[3].

Interpersonal communication involves one on one conversation or individuals interacting with many people within a group, community or society that helps to construct, negotiate and address a social reality or problem. Mobiles as one of the most personalized tool has emerged as an effective medium for interpersonal communication assisting in sending and receiving messages, listening, asserting, sharing feedbacks and reactions. This has transformed both individual and group centric interaction and behavioural and social change.

A review of selected case studies of mobile applications in training of frontline workers and interpersonal communication as described below brings out key essential areas for consideration and follow ups:

[3] *ICTs in maternal and child health poised for scale up in Uttar Pradesh, India, http://frontlinehealthworkers.org/icts-in-maternal-and-child-health-poised-for-scale-up-in-uttar-pradesh-india/*

2B. Case Study 1

Project Name: BridgeIT India

Organisation: EZ Vidya Private. Ltd.

Location: Tamil Nadu

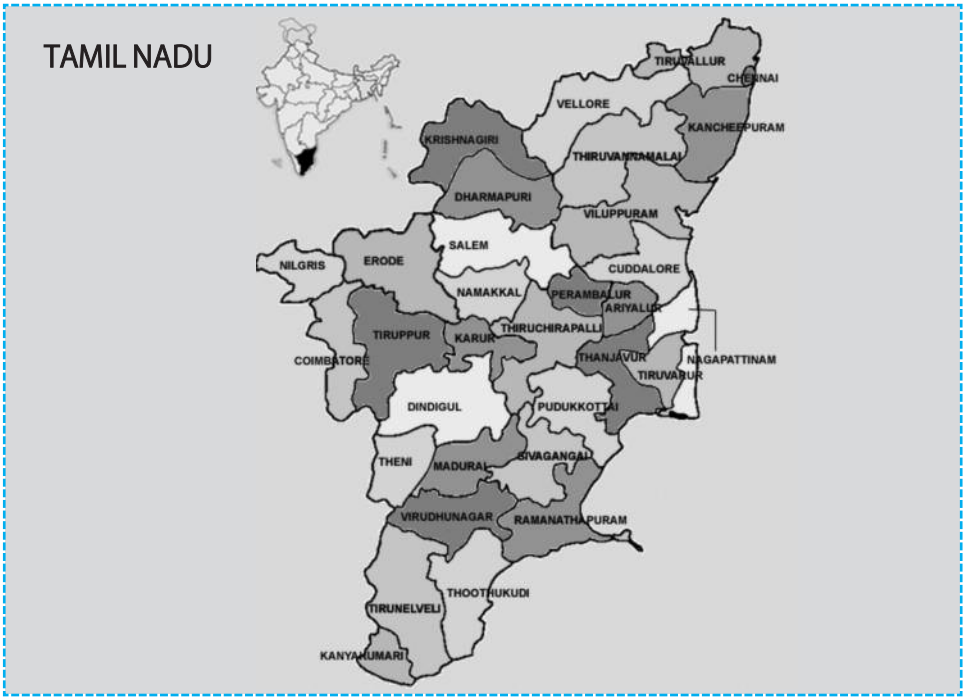
Project since: 2011

Project URL: www.bridgeit.in

Description:

BridgeIT India uses a standard mobile phone to improve the quality of teaching. The project is a partnership between Indian schools, NOKIA, The Pearson Foundation, and EZ Vidya. It was started in March 2011. The objectives of BridgeIT India were: DIGITAL TEACHERS: To integrate the mobile platform into teaching and evaluate its effectiveness through teachers experience of using it in the classroom; ENGAGED STUDENTS: To evaluate learning improvements due to the integration of mobile technology, content, and methodologies into the teaching processes and; SCALABLE MODELS: To broaden impact of mobile technology in education, evaluate sustainable models, and identify how to scale at low increment cost.

In BridgeIT, teachers receive a TV-out cable and C7 mobile phone pre-loaded with NOKIA Education Delivery (NED). Teachers get training, suggested lesson



plans, classroom visits and remote support. The school provides a TV or LCD projector. The teacher uses NED and the TV- out cable to display content in class.

Result: Post-tests showed a sharp increase in learning compared with control (Control: Pre-test avg. 58% to Post-test avg. 60% vs. NED: Pre-test avg. 49%, Post-test 64%). Teachers have changed the way they teach, away from lecture style and towards more student-centred, hands-on methods. 57% of lessons were "High" quality post-NED vs. 24% pre-NED, using objective criteria. NED classrooms had less teacher talk time and more student collaboration than non-NED classes. Teachers and students were enthusiastic to participate for year 2. Most importantly, schools have increased their financial support towards technology based learning and teaching.

Project Strength, Weakness, Improvisation & Scalability

1. The project 'BridgeIT' has reached out to 108 schools and 176 teachers. The objective is to bridge the gap between teachers and technology and improve teaching and learning practices and make it suitable for 21st century. The uniqueness of the project is the inexpensive setup, as the handsets are provided to the teachers with collaboration of Nokia.

2. The project has helped to deliver content and training for teachers with provisions for offline follow-up with teachers on their outcomes. One outcome highlighted is students are more enthusiastic about the new approach and are encouraging teachers to incorporate more mobile video learning in the class. Smart phones have also made the teachers eager to learn and adapt.

3. Challenges faced in the project are content produced in different accent (American) which was later modified to Indian accent. The availability of connectivity and power was a challenge initially but the videos were pre downloaded to combat the issue.

4. Regarding scalability of the project it is highly scalable as there is only one time cost for content creation and that it can be played on offline mode as well. The lack of availability of TV sets can be a challenge, as also how can it be made compatible on ordinary phones. The PICO projector can be procured which is quite cheap and can be run through the light of mobile phones.

5. There should be integration with government agencies in order to promote conversion of the content to local languages and implement in all government schools.

2B. Case Study 2

Project Name: Mobile Kunji

Organisation: BBC Media Action

Location: Bihar

Project since: 2010

Project URL:
http://www.bbc.co.uk/mediaaction/where_we_work/asia/india/india_sdp_mass_media.html

Description:

The community health worker is crucial human resource to promote maternal health and reduce maternal and infant mortality in a state like Bihar in India. The basic problems faced by the workers across the State in their functions until now included lack of proper tools through which they could convince the rural families on health prevention and treatment issues. In order to help frontline health workers function better in the state in health care services delivery, they are now provided with an innovative job aid called 'Mobile Kunji'.

Mobile Kunji is an audio visual job aid for community health workers (ASHAs and AWWs) to use with families that provides information about 9 life-saving maternal and child health behaviors. The project considered first-of-its kind initiative in the country, is being taken up in eight districts of Bihar, including Patna, under a partnership forged between the Bihar government, Bill and Melinda Gates Foundation (BMGF) and BBC Media Action (India). With the aid of Mobile Kunji,

workers with adequate training use mobile tools to effectively disperse health messages and increases the demand of health services provided by service delivery partners under the newly launched Ananya programme since 2012.

'Mobile Kunji' is a pack of 40 wellillustrated cards on a ring that communicates important health messages to rural families with the help of graffiti and text. Each card has a unique toll-free short code that when dialled by the health worker from his/her mobile phone, takes the listener (or the audience) to free audio recording that further elaborates the health message that the particular card carries. Each card has its own unique code. The audio message is delivered by a fictional doctor character, Dr Anita.

The 'Kunji' can be carried all the times and doesn't require reams of paper or very improved technology, but just a normal mobile handset that has a speaker. This is seen as a low-end technology for high-end gains. The major challenge in the project has been to train about two lakh health workers with the least possible cost involved. For the purpose, a 'Mobile Academy' was designed. From 2013, the projects will be implemented in all 38 districts of the state.

Result: Between May 2012 when Mobile Kunji was launched and March 2013, 21, 32,420 minutes of Mobile Kunji content have been played by 89,171 unique users. More than 44,000 community health workers are already using it. Health workers have accessed over 1 lakh minutes of audio content. About two lakh health workers have been trained on the mobile application. The project is being implemented across all 38 districts in Bihar in next phase.

Project Strength, Weakness, Improvisation & Scalability

1. The project 'Mobile Kunji' by BBC Media Action has been implemented in 8 districts of Bihar. This project is aimed at imparting integrated knowledge, self-efficacy, and health practices to counter the growing demands in health sector. The project covers a wide spectrum of health issues. It has enhanced the interpersonal communication to improve the quality of home visits of frontline workers.

2. The project is being scaled up to other districts by 2015. Towards this the State government has already drafted the programme layout for implementation in all districts from 2013.

3. The two key gaps identified were - the frontline workers did not receive any formal training on how to build strong communication with beneficiaries; and there were no material to aid the training.

4. For the project rather than scalability there should be more focus on sustainability and cost.

5. There should be resourcing from community for IVRS and there is a need for collaboration with different government schemes especially in health sector.

2B. Case Study 3

Project Name: CommCare

Organisation: Dimagi Health Solutions & NEEDS

Location: Jharkhand

Project since: 2010

Project URL:
www.needsngo.in

Description:

CommCare is a job aid tool. This application contains mobile illustrations and audio messages covering need-to-know topics in antenatal care which an ASHA/ Sahiya can use to educated pregnant women in her village, regardless of their level of literacy. A client management interface provides the ASHA/ Sahiya with a list of her clients and the ability to review previously discussed topics, ensuring that nothing is missed. Real-time data submission to a central server allows close monitoring and supervision of the ASHA's / Sahiya's work.

CommCare begins with the illiterate user. It leverages multimedia capabilities of common phones to deliver educational information to anyone, regardless of their level of literacy or education. Audio messages can be recorded in any dialect and easily integrated into the existing application. Its multimedia draws attention and is easily understood. Corresponding with loading and sharing of music and videos for entertainment via mobile phones, prevalent even in rural areas,

CommCare follows this trend and uses mobile technology in a familiar and positively accepted way for normal mobile users.

The initiative is a case management solution for community health workers (CHWs) - for Jharkhand Sahiyya workers. Each Sahiyya is equipped with an inexpensive mobile phone running one mobile based software that contains registration forms, checklists, danger sign monitoring, and educational prompts for pregnant women & women who has delivered & neo-natal babies. The software itself helps to manage enrolment, support, and tracking of all of the CHW's clients and their activities.

The project provides users with one-button access to CommCare, allowing the ASHA / Sahiya access to health information in seconds. The low-literate user interface design requires a minimal amount of buttons to be pressed (in some cases only two buttons, one to play audio and one to move to the next question). Additional forms and features like data entry and client management are accessible to those ASHAs / Sahiyas who are more technically capable.

Result: 100% pregnant women and neo-natal babies in 2 blocks, Sarwan and Sonaraithadi blocks in Deogarh District in Jharkhand have been served by CommCare service. More than 440 ASHA workers have been trained and involved in the project.

Project Strength, Weakness, Improvisation & Scalability

1. The project 'CommCare' with a mobile application helped to counter the problems of maternal deaths in Jharkhand, where maternal death rate is quite high. This was caused by the delay at home, transport, and at institution level.

2. Challenge faced was to train the illiterate Asha workers to use mobile phones in order to send messages. The changes seen were early registration, increase in the level of nutrition, increase in use of mosquito nets and follow healthy practices.

3. The project has the potential of scalability in that the application is available in basic handset and that they are collaborating with agencies like Digital Empowerment Foundation (DEF) to create an android-based app as well.

4. There requires policy advocacy and the government should intervene at both state and national level in such programmes. More corporate agencies should be contacted to provide low cost and subsidized handsets.

5. Collaboration with Universities for carrying out research on the outcome and creating procedures to replicate the idea is necessary.

2B. Case Study 4

Project Name: HealthPhone

Organisation: The Mother and Child Health and Education Trust

Location: Maharashtra

Project since: 2011

Project URL:
http://motherchildtrust.org

Description:

Health Phone was launched by the Mother and Child Health and Education Trust, a not-for-profit initiative. It provides families with their own personal reference library and guide to better health practices. Available in real time, right to those who need it, when they need it and when a health problem is about to strike, where they are, and as they are.

HealthPhone uses communication processes to improve life chances for poor and vulnerable populations. It involves a mobile phone, with basic health information embedded on the phone; provide families in rural villages and slums with essential health information, in their hands, when they need it, in a language they understand and with visual information that works for those with low literacy levels.

HealthPhone's health and nutrition content is scripted on knowledge prepared jointly by UNICEF, WHO, UNESCO, UNFPA, UNDP, UNAIDS, WFP and The World Bank.

It addresses the main areas of concern; Timing Births, Safe Motherhood and New-born Health, Child Development and Early Learning, Breastfeeding, Nutrition and Growth, Immunization, Diarrhoea, Coughs Colds and More Serious Illnesses, Hygiene, Malaria, HIV, Child Protection, Injury Prevention, and Emergencies (preparedness and response). This content are pre-loaded on popular low-cost models of mobile phones – no signal is required, nor cost and knowledge to download videos and other media. Users choose what they want to watch and when, wherever they happen to be.

Result: In Information dissemination among beneficiary group / front workers, 1800 mothers, 60 frontline workers and 5000 children in schools and 2000 young people through frontline workers have been covered. In training and capacity building of frontline workers 60 workers have been engaged. In monitoring and tracking of progress 5 frontline workers have been trained and engaged. The content have already translated into 215 languages, over 15 million copies are already in circulation. Illiterate friendly video, audio and image files highlighting over 125 key health messages in English and 15 Indian languages have been issued as well.

Project Strength, Weakness, Improvisation & Scalability

1. The project 'HealthPhone' is considered an innovation forward. It provides families with their own personal reference library and guide to better health practices. It has provision for preloaded content on low-cost mobile phones and on the Cloud! This project is implemented through the collaboration with Maharashtra Government through providing a chip or a micro SD card that is pre-loaded with information for Rs 200 only.

2. The HealthPhone project is a scalable model and especially its audiovisual component is highly scalable. This model is horizontally replicable.

3. However, there are areas that require improvement like recording of data. Also women intervention should be direct rather than mediated through frontline workers. There can be crowd sourcing. It can be customized for virtualization to make it portable on basic types of devices.

4. The content should be made mandatory for providers. There is need for subtitling in audio- visual content.

5. The challenge is it requires huge capital investment in order to provide for handsets and the chip. Sustainability and cost management is a challenge.

2B. Case Study 5

Project Name: mDiabetes

Organisation: Arogya World

Location: All India

Project since: 2012

Project URL:
www.arogyaworld.org

Description:

mDiabetes was launched by Arogya World in partnership with Nokia Life across India in January 2012. The objective of this initiative was to disseminate vital information about Type 2 Diabetes and what life style changes one should make to prevent diabetes through alerts in 12 languages to 1 million consumers throughout India. Nokia phone users, who subscribed to Nokia Life services, were sent these carefully designed alerts which would be useful reminders for adults about healthy living as a way to prevent diabetes. Users receive content twice a week on their Nokia Phones. mDiabetes is an ongoing Clinton Global Initiative from Arogya World.

The diabetes awareness and prevention content has been developed with strong emphasis on science and behaviour change. These have been reviewed for cultural relevancy, technical accuracy, translated and transmitted to mobile phone consumers throughout India. The program's effectiveness in increasing the adoption of healthy lifestyles, known to prevent diabetes, is being periodically measured. The user

subscribes to the service by browsing the Health menu on Nokia Life or opting in to a service offer alert that they have received.

mDiabetes is considered the largest mobile-based program in an emerging market to-date for diabetes prevention. The uniqueness of this program also lies in the ecosystem of partners built for the initiative. This effort is new and is one of the first nationwide diabetes education mHealth initiatives in a large developing country and can provide much data of interest to the public health world. The effort includes several public-private partnerships in which every partner has a valuable role.

- Nokia provides an innovative device and technical platform - Nokia Life - to reach consumers throughout India.
- Arogya World's Behavior Change Task Force of medical, health promotion and consumer experts from the US, UK and India have reviewed the content and shaped evaluation.
- Emory University has provided behavior change and diabetes expertise for content development.
- The program's market research partner is Ipsos (formerly Synovate).
- Private sector partners Biocon, Lifescan Inc., and Aetna are providing support for various aspects of this initiative.

Result: The mDiabetes program is already operating at a national scale since Jan 9, 2012 and 1 million consumers have received the diabetes content till date, so the sustainability is high. The content of the application is available in English and 11 other Indian languages.

Project Strength, Weakness, Improvisation & Scalability

1. The project 'Nokia-Arogyam mDiabetes' is about creating awareness about diabetes. The content of the application is towards creating awareness among people towards the disease of diabetes and motivating them to follow better health practices.

2. The sustainability of the project is high because of the relevance of the subject it focuses on and the mobility to reach out to citizens.

3. The project is inherently scalable due to low cost model and simplicity. Further the subject it addresses has wider need and acceptance amongst potential user segments.

4. However, the content plan needs to be updated. There should be addition of interactive voice component along with a mechanism to record the performance of each user.

5. There should be an incorporation of other array of lifestyle diseases as well as linkages with local medical practitioners.

2B. Case Study 6

Project Name: 'Hello Sakhi'

Organisation: Kutch Mahila Vikas Sangathan

Location: Kachchh, Gujarat

Project since: 2010

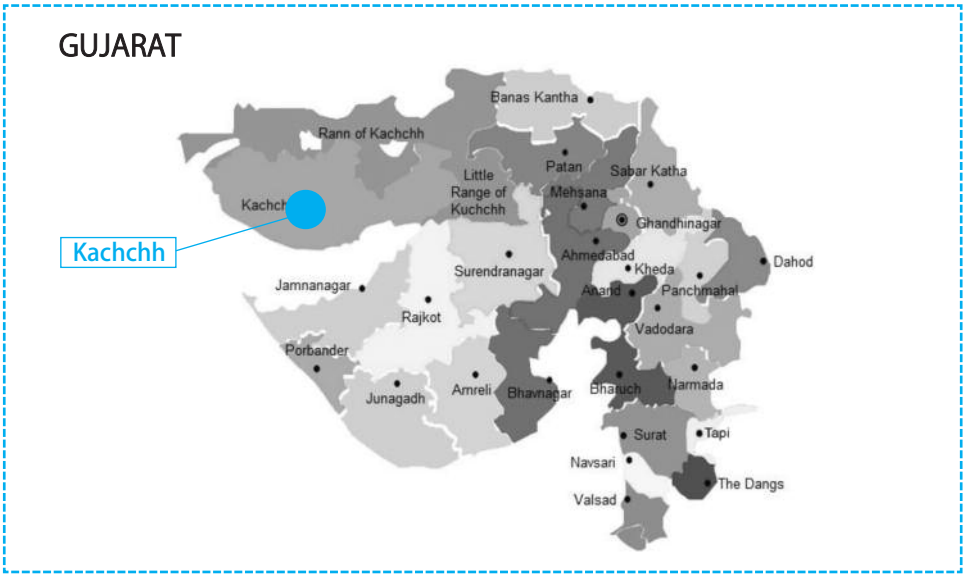
Project URL:
www.kmvs.in

Description:

The project "Hello Sakhi" (Hello Friend) is a helpline, situated at the women police station in Bhuj city of Kutch district in Gujarat. The helpline has been initiated as a joint effort between Kutch Mahila Vikas Sangathan (KMVS) and Kutch police department, conceived and launched in the year 2010.

The project aims at responding directly to the victims at 3 levels: 1. Listening to their problems and try to provide counselling 2. Refer them to nearest counselling centre run by KMVS for meeting with counsellors 3. Advise the callers on legal matters surrounding their issues 4. Facilitate the callers for filing FIRs, court cases and further legal action. The project uses mobile applications like portals, voice SMSes, conference facilities to connect with the callers to send information and receive feedbacks.

This is the first initiative, where the helpline goes beyond conventional helplines – which usually counsels the callers, while "Hello Sakhi" provides immediate services to the police stations and counselling centres spread across the district. The helpline has been launched for more than 1.5 years, and has started becoming unique platform



that connects women members instantly to the legal awareness and education. The project has aimed at addressing singularly important issue surrounding life of women- awareness on their entitlement and educating them about their human rights.

Result: The helpline has so far covered 10 blocks and 940 villages of Kutch district of Gujarat. It is spread around more than 11,000 women members of KMVS and other women of entire region. Since the launch in 2010, more than 800 women have availed the help directly through call and another 300 women have visited the counselling centres through helpline.

Project Strength, Weakness, Improvisation & Scalability

1. The project 'Hello Sakhi' is a helpline that aims to provide legal education to women who are victims to physical, mental stress and facing abusive conditions. The helpline, with a mobile dialing facility, is situated at police station, which in turn connects the victims to counselors spread across the district. This ensures immediate counseling, help and rehabilitation efforts towards the victims.

2. The behavioural change impacted is it has made the police more accountable as the number of cases registered towards violence against women has increased 3 times in only one year.

3. The project is a scalable model, as it does not involve any high-end technology. The current scenario of violence against women in the country can be articulated to make the model widespread. The project owner ought to collaborate with other women organization.

4. The project is very economical as the fixed cost for one-time training is Rs. 35,000 and other recurring cost is Rs.65000 for one district. There should be partnership with the government departments especially Department of Women & Child Development.

5. There is requirement to look into the need for making the mobile number of Hello Sakhi toll-free to solicit more demand and participation. Project sustainability aspect cannot be overlooked and is an ongoing challenge. Addition of service component can be looked into.

2C. Mobiles for Programme Monitoring / Tracking

Mobile-based technology, and its associated benefits of real-time data sharing and data analysis including SMS based system have enabled organisations and agencies to use monitoring and evaluation (M&E) data for better project implementation, output and outcomes[4]. There are instances wherein mobile-based monitoring and data collection tools have helped to manage projects better with pre-loading of data, skips, validations and locations (Graphic Information Systems – GIS), media (photos)[5].

The mobile based data collection service providers have rolled out software and systems to support M&E instruments. This has benefitted in better control of field staff in M&E, access to the surveys and data; access of collected-data in real-time. The choice of using a normal phone or using smart mobile devises has allowed for Mobile Apps with 'form-based interfaces' for data entry, location (GPS) tracking, media (photos) and biometric data capture[6]. It is found that data collected through this process helps in better audit control of programmes due to location and visual evidence electronically provided by mobiles.

Mobile-based monitoring solutions have helped to collect data and feedback from beneficiaries directly. Having access to real time data and inputs from mobiles is helping in better understanding of project impact on ground real time instead of relying on timely reports. Also, by requesting 'anytime and anywhere' access to project monitoring data, one can introduce a higher degree of transparency and accountability, at each level[7]. For citizen engagement and facilitate participation of the beneficiaries, provisions like integration of toll-free IVRS (Voice) or SMS services are being integrated. Such value added elements certainly calls for technically qualified workers / staff.

A review of select case studies of mobile applications in project monitoring & tracking as described below brings out key essential areas for consideration and follow ups:

[4]*Mobile based technology for monitoring and evaluation, http://www.theclearinitiative.org/Mobile-Based%20Technology.pdf (July 8, 2013)*
[5]*Ibid.,*
[6]*Ibid.,*
[7]*Ibid.,*

2C. Case Study 1

Project Name: IVRS – Daily Monitoring System of Mid-Day Meal Scheme

Organisation: Mid-Day Meal Authority, Uttar Pradesh

Location: Uttar Pradesh

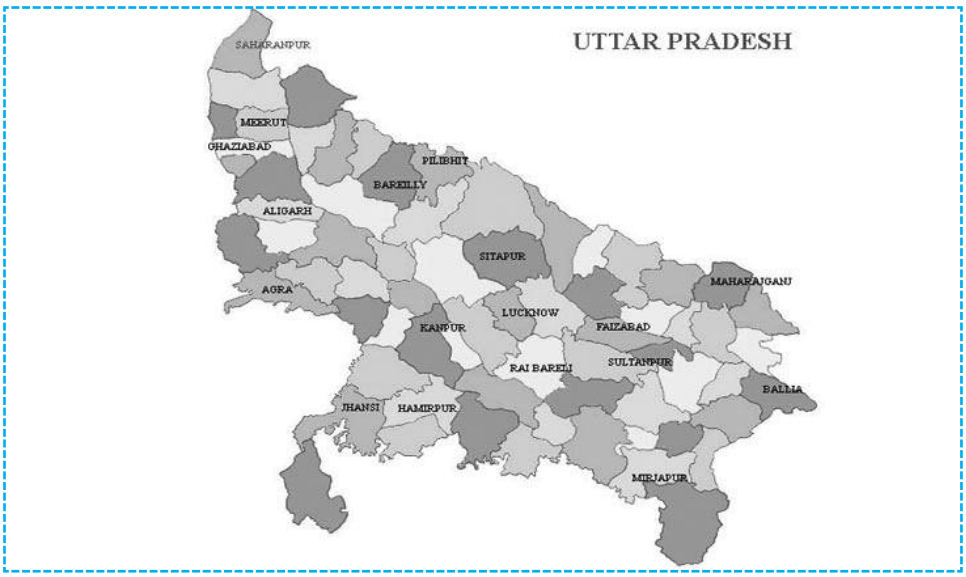
Project since: 2010

Project URL:
www.upmdm.in

Description:

The IVRS (Interactive Voice Response System) based Daily Monitoring System (DMS) of the Mid-Day Meal Scheme is an initiative of the Mid-Day Meal Authority of Government of Uttar Pradesh. The IVRS based DMS system envisages an automated Management Information System (MIS) where data of children availing mid-day meal would be available on daily basis. In view of the developments in the field of internet based technologies and onrush of mobile telephony in the rural area, the system is conceived on the basis of an interface between computer and mobile phone.

The major challenges in getting real time data from almost 1.5 lac schools of the State were mainly two: getting data through 'pull' method and second, facilitating teachers for giving data without spending a single penny so that reimbursement/accounting/auditing exercise is not required. The system which came handy, in view of above, was IVRS based one. It gives school-



wise information access on real time basis through an out bound dialling solution wherein calls are placed to all the teachers from a virtual number using Primary Rate Interface (PRI) lines. The system generated compilation of the data of number of children who availed Mid-Day Meal (MDM) would be keyed-in by the teachers and will be displayed on web the same day. Moreover, transmission of real time data do not leave scope for data manipulation/distortion and availability of exception reports would improve efficacy and transparency of the system.

Activities like convincing the teachers about the benefits of the System and making them so aware as to own the System, development of the data-base and purging it, devising mechanism of call system and call escalation, on-line verification of the mobile numbers of almost 4.5 lac teachers, devising mechanism of updating of database in case of change of teachers' place of posting or mobile numbers, establishing call-centre for personalized attention to teachers query etc. have been major landmarks of the System.

Result: As regards milestones, the major objective was to make the DMS live since academic year beginning in July' 2010. The Project was assigned in Mar'2010 and since then vital activities were undertaken - codification of about 1.5 lac schools, trainers-training, preparation, design and printing of about 6, 00,000 operational manuasl and its distribution before onsite demo, onsite/ on-line demo/teachers' training in about 820 blocks and town areas of the State, collection of teachers' personal phone numbers (as neither phones nor SIM cards have been given by the Government to the teachers).

Project Strength, Weakness, Improvisation & Scalability

1. The project 'IVRS based Daily Monitoring System (DMS) of Mid-day Meal in Schools' in uses an automated mobile-based MIS where data of children availing mid-day meal is made available on daily basis. This is to check malpractices and ensure proper implementation for retention of school children as well as check dropouts.

2. The project has been implemented in entire State of Uttar Pradesh covering all 75 districts, covering approx. 1.5 lac schools which reveals the strength of project design, implementation and strength.

3. The key to the success of the Mid-Day Meal project is its simplicity. Nothing is at stake due to low investment. The costing has been managed well. Hence the scalability is wider possibility.

4. However, one area of improvisation is there is lot of data generated in the project, which needs to be used in further project sustenance, strengthening and addressing gaps in the mid-day meal provisions.

5. The project has also called for caution as it was one-of-a kind and also the first of its kind with no previous models to bank on.

2C. Case Study 2

Project Name: E-Mamta – Mother & Child Tracking System (MCTS)

Organisation: State Rural Health Mission, Department of Health & FW

Location: Gujarat

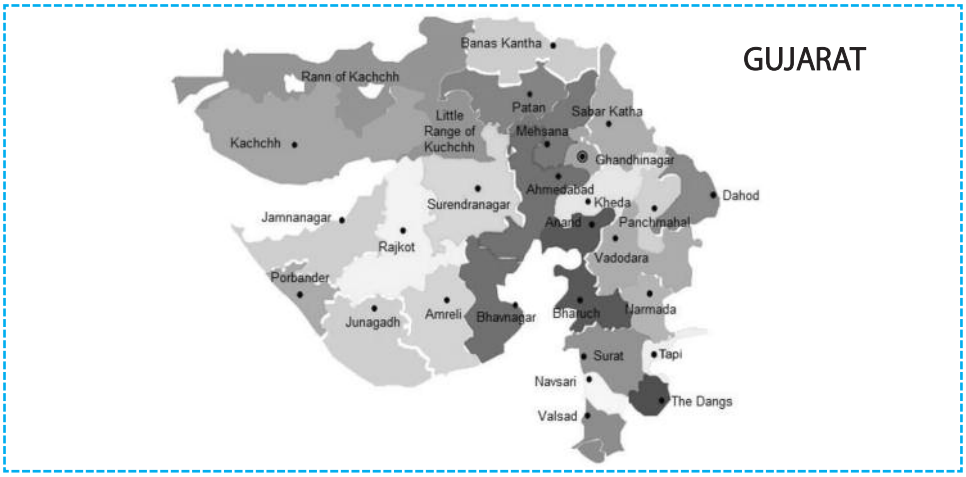
Project since: 2010

Project URL:
http://e-mamta.gujarat.gov.in/

Description:

Reduction of Infant Mortality Rate (IMR) and Maternal Mortality Ratio (MMR) are important public health challenges. Tracking of pregnant mothers and children has been recognized as a priority area for providing effective Healthcare services to this group. This in turn can have a large impact on reducing IMR and MMR. As a major initiative in this regard, State Rural Health Mission, Gujarat, introduced a mother and child name-based tracking information management system called 'E-Mamta'. E Mamta mother & child tracking web based application http://e-mamta.gujarat.gov.in is uniquely designed management tool being executed in Govt. health facility across Gujarat to accommodate for gaps in ensuring comprehensive maternal and child health services in rural as well urban areas.

Rural health challenges such as high dropout rates, high left out rates, quality of services, inability to track beneficiary pregnant women and children leading to high MMR and IMR are tar geted through the E-Mamta. Tracking of pregnant woman and children were made possible with 8 search criterion (location, name, ration card number, mobile number, health id, family id, BPL, RSBY no., child date of birth). This



process thus gives each Sub centre, Primary Health centre, Post-partum units correct denominator and an accurate list of left outs and drop outs. Daily around 100 auto generated SMS are sent to pregnant woman and families of children to remind for due services. SMS facility for intradepartmental coordination through E-Mamta is such that the Chief district medical officer, block health officer and medical officer can communicate through SMS service to the field workers. Developed for quick communication in times of disasters and medical emergencies in state, a record 16,000 SMS were delivered to all nurses and doctors of Gujarat within minutes of infant deaths reported due to measles vaccine.

Customized SMS for each beneficiary according to their due dates of services is a new paradigm. Bilingual (Guajarati and English) SMS on uptake of ANC services, anaemia services, immunization, delivery, family planning, PNC are sent to target beneficiary or their families/relatives in each group before their due dates. "Apni Matru ane bal kalyan sewao mate najikna arogya kendra ni mulakat levi.Mulakat lidhel hoy to aabhar".The above regional SMS meaning –'kindly uptake ANC service from your nearest PHC on Mamta divas' reaches each pregnant women of Gujarat having a mobile phone before her due date of ante natal check up till she takes up the service.

E-Mamta is accessed through user id and password for in-department employees. Conceptualized by the State Rural Health Mission of the Health and Family Welfare Department of Gujarat, in January 2010, the program was developed through National Informatics Centre (NIC) Gujarat.

Result: The project 'E-Mamta: Mother & Child Tracking System' has deployed mobile tools as platforms to monitor health services delivery to mother and child in all 26 districts of Gujarat, all 172 health blocks comprising of 1147 Primary Health Centres, 318 Community Health centres, 26 Sub District Hospitals and 26 District Hospitals. The application so far has stored family health records of more than 95 lakh families, health details of 4.5 Crore population (80%) of Gujarat Population. E-mamta has registered 21,95,028 pregnant women and total families reached out is 98,42,467, and total children registered is 7,25,279 for MCH services.

Project Strength, Weakness, Improvisation & Scalability

1. The uniqueness of the project E-Mamta is that it has covered nearly 4 crore population in Gujarat.

2. There are areas that need improvisation. The traditional way of collecting data amounts to almost 30% data entry gap. Real time data collection method should be used. In Urban sector, government intervention is weak for data collection. There is no scope of interactive platform.

3. The National Informatics Centre (NIC) Gujarat can be engaged for scaling up the internal features like making the project more interactive with both web and mobile. There should be a planning to reduce field presence and increase service reach. Participation is missing and the other states, which emulated the model, have taken it to next level.

2C. Case Study 3

Project Name: Nano Ganesh

Organisation: Ossian Agro Automation Pvt. Ltd.

Location: Maharashtra

Project since: 2008

Project URL:
www.nanoganesh.com

Description:

Nano Ganesh, launched in 2008, is a mobile-based wireless remote control and alarm system for the water pumps, appropriately designed taking into consideration the unfavourable conditions in the irrigation zone. It seeks to provide appropriate wireless automation for efficient operations of irrigation systems.

The need of Nano-Ganesh aroused from the routine problems faced by the farmers or irrigation operators in operating the pumps viz. fluctuations in power supply, difficult terrain, fear of animals on the way to pumps, hazardous locations of the pumps along rivers or water storage beds, shock hazards, rains etc. Also, in the rural water supply schemes, there is no proper coordination in the water tank and the water source. An irrigation operator needs to physically present frequently for on/off and monitoring the water levels of the tank.

The project has multiple work flow and different systems used individually or in combination: 1. Remote control for the water pumps: Nano Ganesh (Pumps): A farmer or an irrigation operator can monitor and check availability of the power at the pump, can switch the pump on/off, and acknowledge the on/off status of water pump from any place. 2. Wireless Alarm of tank water levels on the mobile phones: Nano Ganesh (Alarm): A Wireless alarm of

water level is being used by an irrigation operator where a message of "Water Tank Full" or "Water Tank Empty" is displayed on his mobile phone when he is busy at his work. This helps him instantly control the pumps as soon as the tanks are full and avoid a huge wastage of water and electricity.

Nano Ganesh is specially designed to be robust to perform efficiently in the rural atmosphere where problems like voltage fluctuations, shock hazards, open wiring and marshy terrain are common. To make this system more accessible to the farmer fraternity, Ossian Agro deploys basic phones. All that Nano Ganesh needs is a low-cost wireless connectivity with voice transmission and Dual Tone Multi Frequency (DTMF) transmission available in most handsets.

Using Nano Ganesh connected to the existing starter along with a low cost mobile phone, 1. A farmer can switch on / off his pump with a mobile or land line phone from anywhere. 2. He can check an availability of the power supply near the pump end. 3. He can acknowledge the on / off status of the water pump. 4. An operator can receive an sms alarm on his mobile phone as soon as a water tank is full or empty.

Result: So far, 10,000 remote controllers are in use and have improved the livelihoods of 40,000 people with 1,000 rural technicians getting an additional source of income; 180,000 m3 of water, 1080 MWh of electricity, 180 m3 of fuel, and 18 m3 of soil saved in the year 2010 by installing 2,000 Nano Ganesh sets; $720,000 in saved labour costs in the year 2010.

Project Strength, Weakness, Improvisation & Scalability

1. For the millions of inefficiently operated irrigation systems in agriculture and drinking water schemes, Nano Ganesh seeks to provide a timely control and monitoring of pumps via a mobile-based remote controller which is low cost, simple, easy to install and repair by illiterate villagers, and built for the local needs in rural areas with no user constraints such as age, language, education, technical experience or gender. The project is environmental friendly and safe.

2. In order to scale up the project requires advocacy and education programme. Also it needs sales and marketing to expand the social business. Government intervention is required to draw investment and policy change.

3. It needs to be researched and analysed as to why rural investments are missing in such mobile-based programmes. External research is required to know why the project is not being scaled up.

4. The cost aspect needs to be monitored: money spent, cost of model, cost of creation and recurring cost. This is surely to help in optimum project design and implementation with judicious resource allocation.

3. Summing Up

The overview of case studies above provides a diverse experience and perspective of using the mobile space for social and behavioural needs in varied contexts. The challenge is to scale up these innovations and success stories for greater social and economic impacts. The challenge going forward is to ensure that mobile practices and innovations benefit all Indians, including the poor and vulnerable and those living in inaccessible areas.

As it has been observed, there remain vital challenges towards sustaining the pilots and scaling up the same. Issues in improvisation of mobile projects included technology and platform feasibility, real time data collection, database management and data usage for course correction, local language support, two way communications and response system, community ownership and engagement, IVRS integration, project customisation and others.

Issues in scalability included collaborating with diverse set of agencies, business model with low investment, collaboration with government nodal agencies, flexible source of funding, wider advocacy and education programmes, effective sales and marketing, and project cost design and management. The project sustainability is the overall concern in the medium and long term which requires policy support like priority grants and subsidises and investment in priority areas like rural based projects.

It is strongly felt that a robust and working multi-stakeholder partnership among parties will help to identify and replicate pilots with improvisation and better operation and sustainability model. With cautious approach and learning from the pilots and limitations therein, the scope to scale up the pilots is wide with higher success ratio. At policy and programme support level the ideas of – corpus fund to support civil society agencies on mobile for SBC projects, a consortium of mobile for SBCs, an incubation platform to support innovations must be considered on priority basis.

Notes

Notes

Notes

For more information

UNICEF
73 Lodi Estate ,New Delhi 110 003
India

Tel: 91 11 2469-0401, 2469-1410
Fax: 011 2462-7521, 2469-1410
Email: newdelhi@unicef.org
URL: www.unicef.org/india

Digital Empowerment Foundation
House No. 44, 3rd Floor, Kalu Sarai
New Delhi – 110016, India

Tel: 91-11-26532786
Fax: 91-11-26532787
Email: def@defindia.net
URL: www.defindia.net

unicef
unite for children

10 YEARS DEF
DIGITAL EMPOWERMENT foundation