Exploring Conditions for Delivery of Successful M-Government Services to the Bottom of the Pyramid (BOP) in India

Subhash Bhatnagar (PhD) | Adjunct Professor, IIM, Ahmedabad, India

Table of Contents

List of Tables

List of Abbreviations

NeGP	National e-Governance Plan
CSC	Citizen Service Centers
FPS	Fair Price Shop
PDS	Public Distribution System
PNR	Passenger Name Record
IVRS	Interactive Voice Response System
MP	Madhya Pradesh
HP	Himachal Pradesh
UP	Uttar Pradesh
ALW	A Little World
ZMF	ZERO MASS FOUNDATION
AP	Andhra Pradesh
BOP	Bottom of the Pyramid
GPRS	General Packet Radio Service
ARPU	Average Revenue Per User
MMP	Mission Mode Project
NREGS	National Rural Employment Guarantee Scheme
NOAP	National Old Age Pension Scheme
APREGS	Andhra Pradesh Rural Employment Guarantee Scheme
TCS	Tata Consultancy Services
RBI	Reserve Bank of India
FI	Financial Inclusion
BC	Business Correspondent
CSP	Customer Service Points
SHG	Self- help Group
SSP	Social Security Pensions
KYC	Know Your Customer
NABARD	National Bank for Agricultural and Rural Development

ABSTRACT

Considering the inadequate coverage of rural citizens by existing e-government projects, the rapid growth of mobile usage in rural India and the demonstrated success of a few projects that deliver information and transactional services through mobile phones, the paper argues for an expanded role of mobiles in e-delivery of government services. The paper explores conditions that can promote the use of mobile phones for successful delivery of government services to those at the Bottom of the Pyramid (BOP) in India.

Examples of some existing m-Government applications that push down information to a community of users; involve a two-way interaction between a government agency and users; or use mobile phones for transactional services such as data capturing by field staff for collection of health statistics, reporting activity levels, and conducting surveys are provided.

The paper presents a detailed case study of a best of breed m-Government project. The project is advancing financial inclusion by enabling banks to open accounts for rural pensioners and helping government disburse monthly social pensions in villages in an efficient, convenient, transparent manner without bribery or fraud that existed in earlier manual systems. The central piece of the electronic bank branch operated by a matriculate self-help group member is a special mobile phone, a biometric identifier and a strip printer. The project has achieved a significant scale, serving 1.6 million pensioners in a short period. Besides providing convenience to poor pensioners the application can eliminate payments to non-existent pensioners. Since the benefits to various stakeholders clearly outweigh the costs, such a project should be scaled up to cover the whole of India. Some suggestions on how the project can be scaled up are discussed.

With the launch of the National e-Governance Plan (NeGP) in 2004 and the opening up of the telecom sector to private players, Internet Kiosks and mobile phones are beginning to reach large sections of rural populations. NeGP has supported the creation of hundred thousand Internet Kiosks in rural areas through public-private partnerships which will be used to deliver different types of government services. The expansion of mobiles in rural areas which has happened largely through competition amongst mobile service providers offers the possibility of an additional channel to deliver services.

Computing and communication services provided through mobile devices have several inherent advantages over Internet services as the equipment is less expensive to buy and maintain, power requirements are minimal, and people can be trained easily to operate the equipment. However, mobiles need not be seen as an alternate delivery mode to Internet Kiosks. For some services, mobiles can complement the delivery of services by providing alerts on the status of completion of an application for service. In other cases, mobiles may provide new services not possible through the Internet such as broadcasting an emergency message to all users. For some transactional services like the payment of pensions, mobiles and accessories offer a more convenient solution as they can be operated even in remote locations.

The paper concludes by identifying some of the essential conditions for promoting m-Government services in India. Unless the roles of Internet Kiosks and mobiles - which are seen to be the two main modes for electronic delivery of services to BOP - are delineated clearly, the two modes could end up competing for clientele in the BOP segment, reducing the prospects of economic viability of both the modes. Also, non-uniform treatment of subsidies across different modes of delivery may result in the expansion of the favored mode even though it may be not be sustainable in the long run. The coverage of mobile services to the BOP needs to be further expanded. Given the low purchasing power of the BOP,

only low-cost mobiles with features like voice-based SMS specially designed to suit the needs of the rural poor can enhance penetration.

Further, m-Government needs to find a place as an appropriate mode of delivery for certain types of services within the National e-Governance Plan framework. Only then are significant investments likely to flow into m-Government projects. Enabling legislation would need to be created so that the law recognizes mobile documents and transactions. Standards will need to be enforced for protecting privacy and providing security for data in the mobile and in transmission.

1. INTRODUCTION

Most of the efforts at improving delivery of Government services for the citizens through e-government are focused on urban areas. Invariably rural citizens need to visit the district headquarter or the taluk (sub-district) headquarter for filing an application for service, collecting a document and collecting/making payments to an agency of the Government.

In India, the rural population accounts for about 72% of the total population and the percentage of total population below the poverty line is 22%[1]. For BOP families, the cost of accessing a service at the taluk level varies from Rs 200 to 300 [1, p.55]. Under the National e-Governance Plan (NeGP) the Government is making a concerted effort to create 100,000 Citizen Service Centers (CSC) in rural areas where citizens will be able to access e-services. There are approximately 0.6 million inhabited villages in India [2] of which nearly 91% are connected to the fixed line telecom network.[2] Inadequate power and last-mile connectivity problems have prevented a fast rollout of the CSCs - only 40,000 CSCs have been created so far. Progress in terms of actual delivery of services is even slower - perhaps no more than a few thousand CSCs are delivering any kind of government service.

It is generally twice as expensive to operate an Internet Kiosk in rural areas in comparison to urban areas because of the need for a power back up (due to poor power availability in rural areas), problems of maintenance of computer hardware, lack of broadband connectivity, and lack of trained manpower to operate computers. On the other hand, demand for services in rural areas is scattered, making it difficult for CSCs to achieve economic viability.

Given that mobile services are increasingly becoming versatile (radio, camera, large storage in handsets and high data transfer rates) and affordable, and mobile penetration is growing quickly in urban and rural areas (see Table 1 below), suggests that mobiles should be considered as an alternative mode of delivery of e-services in rural areas. In mid-2009, the rural tele-density was reported to be 14.8 %[3] and the percentage of rural mobile coverage had reached 69%, as reported by the service providers. There are nearly 110 million wireless subscribers in rural India [3] and the number is expected to grow. In comparison, Internet penetration extended to only 0.6 per cent of the population in rural areas, with the number of active Internet users estimated at 3.3 million.[4]

---

[1] Census Data 2001- India at a glance. Available: http://censusindia.gov.in/
[2] TRAI (2008, December). Paper seeking suggestions/comments on Measures to Improve Telecom Penetration in Rural India - The next 100 million subscribers. Available: http://www.corecentre.co.in/Database/Docs/DocFiles/studypaper16dec08.pdf
[3] Telecom Regulatory Authority of India (2009, July 13). The Indian Telecom Services Performance Indicators January– March 2009. Available: http://www.trai.gov.in
[4] I-Cube 2008: Internet Usage of Indian Households. Available: http://www.researchandmarkets.com/reports/680289/i_cube_2008_internet_usage_of_indian.pdf

Table 1: Mobile Penetration in India[5]

Current status	As on 31-03-2009 (in million)
Total wireless subscriber base in India (Mobile + WLL)	391.76
The number of subscribers for mobile services (GSM) in India	297.26
The number of subscribers for mobile services (CDMA) in India	94.50
Rural wire line subscriber base	10.58
Rural wireless subscribers	109.71 [3]
Number of Internet subscribers in India[6]	13.54

So the key question is whether there are services that can be delivered in a cost-effective manner through mobile phones despite the limited amount of data that can be transferred through wireless networks. The potential of delivering many Government services through a mobile phone is beginning to emerge in many countries.[7] This question is explored in the context of India in the next section.

2. POTENTIAL USE OF MOBILES IN DELIVERING GOVERNMENT SERVICES

M-Government may be defined as the implementation of a strategy involving the utilization of all kinds of wireless and mobile technology, services, applications and devices for delivering information and transactional services to different client groups [4]. Delivery of services through a mobile device can bypass the need for traditional physical networks for communication and collaboration. There are a number of definitions in the literature that approximate the meaning of m-Government explained above.

In the context of delivery of Government services, mobile phones and accessories may be used in the following ways:

1. A mobile phone substitutes a fixed line phone as an access point for users to make calls to a call-center run by the government to provide information and services like filing complaints[8]. Increasing penetration of mobiles in rural areas expands the reach of such services, and the flexibility of making the call from anywhere enlarges the range (nature) of information that may be accessed from a call center.

2. Push down message from a central server to reach users who seek specific alerts/information. For example,

---

[5] Telecom Regulatory Authority of India (2009, July 13). The Indian Telecom Services Performance Indicators January– March 2009. Available: http://www.trai.gov.in

[6] Besides this, there were 117.82 million wireless subscribers at the end of March 2008 who can access data services including the Internet through mobile handsets (GSM/CDMA).

[7] See the summary of a discussion on Solution Exchange (http://www.solutionexchange-un.net.in/decn/cr/cr-se-decn-ictd-09030901.pdf) which reported: Discussants shared e-governance experiences from the United States, which used various mobile technologies, such as wireless networked laptops, voice recognition software and telephone dictation services accessible through cell phones to improve the efficiency and productivity of Child Protection Services workers. Examples from Sweden and the Philippines highlighted the increasing use of SMS in delivery of a number of public services, such as finding workers through SMS alerts from a registered pool of workers and operationalizing a parking system using mobile phones. In Singapore, the government is taking advantage of the fact that it is a mobile saturated population to provide SMS alerts on varied public services.

[8] For example, in a 25-seater call centre located in Bhopal, Madhya Pradesh receiving about 1,000 calls every day nearly half the calls are from mobiles. Complaints are directed to the concerned department and escalated to supervisor if not resolved within the stipulated time. Feedback is sought from the complainant by calling back at the number from the complaint originated. Source: http://www.igovernment.in/PrintStory.aspx?Id=2624

a. Usage where mobiles essentially complement an existing Internet-based service by providing alerts of various kinds in relation to an existing service request to registered users.
   b. Applications that are built around a pushdown of information for a community of users.
   c. Broadcasting a voice message to all mobile users in an area in cases of emergencies and natural calamities[9].
3. Two-way interaction using an SMS service to enquire and receive responses from a Government agency.
4. A mobile phone and related accessories replace the Internet access point for delivering services in an assisted mode to clients. Agents providing banking services or Auxiliary Nurse Midwives providing health services may use mobile devices in conjunction with other equipment to process service requests, and transfer/receive data from remote servers. In such an example the mobile functions as a computing and data communication device.
5. Mobile phones given to functionaries who need to communicate with their supervisors or other functionaries to seek expert advice or pass instructions. Health workers may use a mobile phone to handle emergencies of various kinds[10].
6. Mobile phones are used as a data-capturing device by field staff for collection of health statistics, reporting activity levels by field workers as a part of daily MIS, and conducting surveys. The data may be transferred through SMS or by using WAP depending on the processing arrangement at the backend servers.

Uses outlined above that deliver services to citizens (G2C) can be differentiated by whether the use is directly by a BOP mobile user (1-3) or by an intermediary who delivers service to the BOP (4-5). Type of use indicated in item 6 above is more in the nature of a G2G application used for internal management.

The objective of the research presented in this paper is to broadly assess the potential of m-Government in India for delivering services to the BOP and to identify and evaluate one best of breed m-Government project in order that lessons may be learnt from such best-practices.

First, a literature search was carried out to identify different types of m-Government projects in India from journals, news media, and web sites. A list with a brief description of each project was produced (see Table 2 below). To further understand the potential value for different stake holders and the challenges in implementing m-Government projects, a mature application project with a reasonable scale and scope of activity was selected for a detailed study from the list. The case of ZMF which manages the disbursement of monthly pension (of the aged, widows and handicapped persons) to a pensioner's bank account operated through a special mobile device was taken up for a detailed study. A field visit was made to understand the operations of the application, to interview the sponsors, staff of the agency delivering service, clients using the service and other stake holders and to collect data for evaluation.

---

[9] R. Samarajiva, and N. Waidyanatha, "Two complementary mobile technologies for disaster warning," *Journal of Policy, Regulation and Strategy for Telecommunications, Information and Media*, vol. 11, no. 2, pp. 58-65, 2009.
[10] In Uganda, a walkie talkie given to a nurse who could consult a supervisor when handling deliveries in rural areas reduced the maternal mortality by 50%. Source: http://www.rho.org/html/ict_progexamples.htm#uganda

Table 2: Applications of Mobiles for Service Delivery in India

Type of Application	Examples of Projects	Brief Description
SMS-based Alerts Pushed Down	Bhoomi, Karnataka, 2007	Landowners register with Bhoomi by paying a fee. Will get an SMS whenever there is a transaction on the land.
	PDS, Chattisgarh, 2008	Register phone and Fair Price Shop (FPS). Access to information on availability and supply of food grains, and about times and truck numbers that will deliver supplies to a FPS in order to involve the public in enforcing accountability.
	Reuters, Maharashtra, 2007	Register and receive weather forecasts and commodity prices.
	Western Railways, 2008	Subscribed service for general updates such as mega blocks affecting train services, new services, ticketing facilities, etc., free of charge.
	SMSONE, Maharashtra, 2005	"A Local SMS Community Newsletter" service provided to different communities, each comprising of 1000 registered users. Users are empowered with localized, specific and useful information anytime, anywhere via a SMS. The community is served with messages that are relevant to them, practically covering all aspects of their daily life from health camps to be held, non-supply of water or electricity, and traffic congestion to reminders of bill payments.
SMS-based Two Way Information Exchange	Toll Free Agricultural Help-Line, Haryana, 2007	Users send SMSs to a mobile number, and experts/officials telephonically respond to the questions within 48 hours.
	Jan Seva Kendra, Gandhi Nagar, Gujarat, 2006	Barcode assigned to a service application is used for tracking the application, sending reminders to officers, and for any inquiry on pending cases. People can enquire the status of their application.
	m-Sampark, Chandigarh, 2005	SMS "SMENU" to 58888. A menu of services available will be sent back to user via an SMS, from where he/she can get the required information.

Type of Application	Examples of Projects	Brief Description
	Mysore City Corporation, Karnataka, 2008	Citizens message their problem related to civic services to a pre-assigned number through SMS. An acknowledgment number is sent back with the concerned officer's name and contact number.
	Railway Enquiries	Railway information on train schedule/time table/PNR status/train search/seat availability can be accessed.
WAP based Transactional Services	Zero Mass Foundation (ZMF), Andhra Pradesh	Agents, working on behalf of partnering banks, use special mobile phones and accessories to provide frontend full-featured transactional services (opening of accounts, deposits and withdrawal of cash) for financial inclusion of the rural poor.

3. CASE STUDY OF ZERO MASS FOUNDATION (ZMF)

The case study of Zero Mass Foundation (see Annexure I) is one of the finest examples of an m-Government project in which bank accounts are opened and operated through a mobile device and some accessories so that rural pensioners (aged, widows and handicapped persons) can receive their pension in their village without requiring them to go to a distant bank branch. The case exemplifies many advantages and shortcomings of using mobile technologies for delivery of services.

With expanding memory and computational capability of mobile phones, it is not difficult to conceive of the mobile as a multi-function computing device. The case study illustrates that other devices such as biometric identifiers and small printers can be connected to a mobile in a very convenient wireless way using Near Field Communication (NFC) technology. Large-scale deployment seems to suggest that semi-educated (with ten years of schooling) rural people can be trained to operate the devices with ease - perhaps with greater ease than they would handle a computer. Training of one to two weeks seems to be adequate for such functionaries to be able to operate the devices for live transactions.

The biggest advantage is the independence from a power source for operations of the device. A one to two hour power supply or a solar-powered charger can provide sufficient charge to operate the device for seven to eight hours. If the input output tasks involve a small amount of text such as in banking transactions, the device can be operated with ease and convenience despite the small key board and screen. On the other hand, if documents have to be delivered (such as a copy of land title or a birth certificate) then sturdy printers are needed. If large amount of data is to be captured then it has be done offline using full-sized keyboard devices as in the case of capturing data from an account-opening application form.

The mobility of the device is a major advantage (pension payments for severely handicapped pensioners can be made in their homes) in applications where data must be captured in the field and transmitted in real time. As long as the requirement does not involve heavy files of high-resolution photographs,

extensive sound bytes or data (such as university application forms), mobiles will serve the purpose adequately.

The ZMF case study demonstrates the value that can be delivered to Government agencies and the citizens that they serve by deploying m-Government in certain types of applications. The applications can be scaled up quickly in comparison to Internet Kiosk-based solutions because it is easier to deploy the technology in rural areas. However, for multi-way partnerships to work effectively, incentives for different partners should be fair. The current incentive structure has been designed on an ad hoc basis in the absence of any policy guidelines defining a consistent treatment of how private partners are reimbursed for the cost of processing transactions. As indicated in the case, the fee paid in another e-Government project is much larger in relation to the costs. The answer lies in formulating policies and procedures that will promote the use of m-Government wherever it is a cost-effective technology to deploy. Some of the policy initiatives that are necessary are discussed in the last section.

The role of ZMF has been critical to the success of the ePension roll out in AP. The number of *medium-sized* companies that can create a large field operation involving hundreds of workers in rural areas in a short time frame are very few.

4. POTENTIAL AREAS FOR DEPLOYING M-GOVERNMENT

A number of ways in which mobiles may be used for delivery of government services were discussed in section 2. Table 2 had listed a few applications that have been implemented as pilots in different parts of India. The ZMF case study of delivering pensions demonstrated the potential to deliver transactional services involving payments from Government to citizens. There are a number of other types of pensioners (such as defense personnel) residing in rural areas who can benefit from similar applications. The CSPs in ZMF could also be used for collecting payments of utility bills and application fees for various kinds of Government services.

A variety of information can be pushed down or exchanged through SMS or voice calls on a mobile. Such information can be tailor-made and targeted to specific mobile owners. A large part of the information needs of the BOP remains unmet today. According to a study by Vodafone, small farmers in India prioritized weather, plant protection (disease/ pest remediation), seed information and market prices as being the most important [5]. Traditionally, the farmers used a variety of sources for getting agricultural information including TV, radio, newspapers, other farmers, government agricultural extension services, traders, input dealers, seed companies and relatives. However, the perceived quality and relevance of the information provided by these sources was highly varied. Given that 13-15% of the rural population owns a phone and perhaps twice as many people have access to a phone, phones can be used as a convenient medium for relaying information to farmers. Moreover, given that the percentage of Indian BOP households that have phones has begun to equal the percentage reached by radio,[1] mobiles offer a personalized way of providing tailor-made information in comparison to radio. Mobiles can also become a more convenient source of information provided by the Government in a two-way exchange (either through SMS or voice calls). Employment exchanges can deliver timely and accurate alerts about appropriate job openings, and loans available for setting up small entrepreneurial projects through SMS in local languages to the unemployed rural poor. Many programs for indirect subsidy on commodities consumed by the poor can be switched to an electronic voucher system facilitated through a mobile phone owned by a family member of the beneficiary. For example an estimated 160 billion rupees worth

---

[1] Afaqs (2008, January 21). Lintas Media Guide 2008: Urban and rural reach of advertising media. Available:
http://www.afaqs.com/perl/news/story.html?sid=20191

of subsidy is siphoned off from the public distribution system. If the poor are given electronic vouchers, such that when they purchase food grains, the subsidy gets directly deducted from their electronic voucher and goes into the seller's account, corruption can be reduced significantly [6].

5. CONDITIONS FOR DELIVERY OF M-GOVERNMENT SERVICES TO BOP
Some of the conditions for successful delivery of m-Government services emerging from discussion in earlier sections and the case of ZMF are discussed below.

5.1 Defining a Clear Role for M-Government in e-Delivery of Services
There are multiple channels and modes through which Government services can be delivered electronically. Often, there is a primary mode which handles bulk of the transactions. Other channels are added to provide additional convenience to users. Earlier discussion suggests that m-Government can complement traditional delivery through e-enabled service centers, in many ways. Mobiles can be used for pre and post communication between citizens and Government for services dealing with issue of certificates and licenses. In cases of disbursements from the government like in the ZMF case study, mobile-based systems can become the transaction-processing engines, replacing Internet Kiosks. Mobiles can also be used for making payments (of relatively small amounts) to the government, if mobile-pay applications are developed and are legally enabled. Table 3 identifies respective roles of Internet Kiosks and mobiles – which are seen to be the two main modes for electronic delivery of services to BOP. The roles are based on an analysis of the comparative advantage of the two modes.

Table 3: Differentiation of Roles in Delivery of Government Services

Nature of government services	Role of Internet Kiosk	Role of mobile
Document issue		
Issue of certificates/ licenses (birth and death certificates, ration cards, electoral cards, etc.) on request from citizen	Suitable as a primary mode of service for receiving applications, verifying support documents and delivery of printed certificates. High-speed, full-functional scanners and printers can be used. Operator assistance is available.	Not suitable as a primary mode of service delivery. It can complement by sending alerts (SMS) to registered applicants about collection of documents and allow tracking of application.
Bill/Tax payments		
Issue of demand notice (electricity, phone and water bills, notice for property tax, land revenue) from government agencies. Receiving payments against bills/notices	Notices cannot be delivered to individual customers. Payments can be collected	Can deliver an abstracted bill with amount due and last date to registered individuals. Payments can be made if a suitable m-Pay system is implemented.
Information Exchange		
Push-down messages (alerts during emergencies like riots, natural calamities and disasters, traffic updates etc.) from the government to the	Not suitable for instant communication or targeted to individuals. Suitable for placing large amounts of information in the public domain.	A convenient mode of sending alerts to registered users - small amounts of information, anytime, anywhere.

citizen		
Bottom-up enquiries (on employment opportunities, agricultural product prices, filing health and crime reports, electoral voting, filing complaints/ grievances) requested by citizens.	Can allow live search of databases for detailed information but requires operator assistance.	A convenient (access from anytime, anywhere) mode to do menu-based search for information. Backend operator assistance can make search more effective.
Making disbursements		
Disbursement of government funds under various schemes such as NREGS, Social Security Pensions scheme, etc.	Can be used for opening bank accounts, depositing monthly disbursement into accounts and making cash payments from accounts by a bank agent at the Kiosk.	Can be used for opening bank accounts, depositing monthly disbursement into accounts and making cash payments from accounts by a bank agent.

Unless the roles are delineated clearly, the two modes could end up competing for clientele in the BOP segment, reducing the prospects of economic viability of both the modes. This is particularly true in the Indian case where large investments have already been made in creating Internet Kiosks in rural areas.

5.2 Advocacy: Carving a Space for M-Government within NeGP

Unless M-Government is recognized as an appropriate mode of delivery for certain types of services within the National e-Governance Plan framework, significant investments are not likely to flow into M-Government projects. NeGP, being coordinated by the Department of IT, Government of India, hopes to implement 27 mission mode projects (MMPs) in a five year time frame covering central, state and local governments. NeGP provides indirect subsidies to projects that can deliver services in rural areas. Many of these projects will be implemented in a public private partnership mode by the respective government agencies. NeGP has a special focus on the delivery of services to BOP. When the NeGP was conceptualized nearly 6 years back, the penetration of mobiles in rural areas was very low. Therefore, creation of a hundred thousand Community Service Centers with private sector participation was seen to be the main delivery point for e-government services in rural areas. With the growth of mobile penetration in BOP and the demonstrated success of M-Government projects like the ZMF initiative, the NeGP rural delivery strategy needs to be reformulated to include M-Government.

Fortunately, the implementation of e-government is at an early stage- only about 10% of the services by different levels of government are electronic. Only 40% of the proposed hundred thousand CSCs have been opened so far. The NeGP program for extensive roll-out through public-private partnership has just begun and therefore use of M-Government can be promoted through the NeGP framework.

A multi-layered institutional framework has already been put in place for conceptualizing, designing and implementing specific projects under the 27 MMPs. The potential of M-Government needs to be highlighted through various capacity building programs being undertaken for the personnel working on projects within the NeGP.

5.3 Create Conditions for Economic Viability of Projects
ePayment of pensions and NREGS wages by ZMF is a worthy application that needs to be scaled up. However, it has been conceptualized and implemented by partners that do not have the authority and resources to alter policies which will make a multi-way partnership work in an economically sustainable

way. It is surprising that the Government agency implementing the ePayment of pensions and NREGS wages is not even aware of the NeGP. There is clearly a lacuna in the coordination of e-Government effort at the state level.[1] This may partly be explained by the slow progress on creation of a new structure and building capacity at the state level for implementation of MMPs. There needs to be a champion (an orchestrator) with sufficient authority at the state level to implement a mobile based financial inclusion program. This program can become the platform to handle all disbursements to and receipts for the Government from BOPs.

Non-uniform treatment of subsidies across different modes of delivery may result in the expansion of the favored mode even though it may be not be sustainable in the long run. As is pointed out in the case study in Annexure I, if ZMF received the same transaction fee as paid to rural eSeva Internet Kiosks, the ZMF operations would become viable.

5.4 Increasing Penetration of Mobiles in the BOP - Enhancing the Reach of e-Services
Current mobile penetration in rural areas has been reported at about 15 % which is not high enough for some services that must be offered to the entire BOP population. Given the low purchasing power of the BOP, only low-cost mobiles specially designed to suit the needs of the rural poor can enhance penetration. Basic features like voice calls and SMS should be incorporated while additional features that add to the costs can be removed. Functionality of the phones has to be designed to keep the costs down but not limit the type of government services that can be accessed by the BOP.

The basic mobile service available currently is affordable but is limited by the restriction on size of SMS (no longer than 160 characters) and a small screen. Other value-added services and phone features such as MMS, packet-switched connection (GPRS), voice-enabled services (voice SMS), data transfer cards (3G devices), bigger screens, etc. require expensive phones and services. High illiteracy prevents self-use by citizens as use of mobiles requires the use of a key board. Ability of mobiles to handle many local languages and voice-based SMS, touch screen and icon-based communication would have to be developed for low-cost devices, if such devices are to be used by illiterate citizens to access Government services. The main challenge will be to educate the rural poor on the use of a phone.

The challenge is to deliver a mobile service to rural users that can not only be viable, but be profitable at low levels of Average Revenue per User (ARPU) [7]. Further growth of mobile penetration amongst the BOP rests on the premise that mobile companies can afford to provide coverage in rural areas. The capital investment required to build a cellular tower in a remote rural area, powered by a backup diesel generator, is very substantial [8]. More than half of the cost of operating a rural network, typically, is the fuel and maintenance costs of the diesel generator. There are anomalies in the current policy regime that hinder the expansion of wireless services into rural areas. Further progress can be made by incentivizing the private operators to expand rural services rather than treating it as an obligation[2].

Demand is also not likely to grow unless consumers see greater value from acquiring a mobile phone. The most important value from phone ownership was the ability to act in an emergency. The ability to maintain social relationships as well as a perceived improvement in social status were also seen to be an important value [9]. In 2008, 33% of Indian BOP stated that they did not need to own a phone

---

[1] In fact, lack of strategic thinking at the state level has been identified as one of the hurdles in promoting mobile applications in rural areas in the submission to TRAI by many key players.
[2] Bharti's Response to TRAI Paper on "Measures to improve Telecom Penetration in Rural India –The next 100 million subscribers" http://www.trai.gov.in/WriteReadData/trai/upload/StudyPapers/13/BhartiAirtel.pdf

themselves. The survey findings demonstrated that impact of the phone on 'the efficiency of daily activities' and 'income earning or cost-saving ability', the two which perhaps have the largest economic ramifications, was less strongly perceived among the bottom of the pyramid respondents. Special efforts are needed to enhance the value derived from the use of mobiles by the BOP which in turn can increase the price which would be considered affordable.

Enabling legislation would need to be created so that the law recognizes mobile documents and transactions. Standards will need to be enforced for protecting privacy and providing security for data in the mobile and in transmission.

REFERENCES

[1] Department of Information Technology, Government of India (2008). Impact assessment of e-governance projects. Retrieved April 11, 2009 from
http://www.mit.gov.in/download/ImpactAssessmentReportDraft.pdf

[2] Indiastat.com (n.d.). State-wise number of inhabited and habited villages in India (Census 2001). Retrieved August 29, 2008 from http://www.indiastat.com/

[3] Telecom Regulatory Authority of India (2008, December). Paper seeking suggestions/comments on measures to improve telecom penetration in rural India - The next 100 million subscribers. Retrieved April 11, 2009 from
http://www.trai.gov.in/WriteReadData/trai/upload/StudyPapers/12/studypaper16dec08.pdf

[4] I. Kushchu (2007). Mobile Government: An emerging direction in e-Government. USA: IGI Publishing.

[5] S. Gandhi, S. Mittal, and G. Tripathi (2009, January). The impact of mobiles on agricultural productivity. The Vodafone Public Policy Paper Series, Number 9. Available:
http://www.vodafone.com/publicpolicyseries

[6] dgCommunities (2008, February 5). M-Government: The new frontier in transforming public services. Available:
http://topics.developmentgateway.org/egovernment/discussion/default/showDiscussion.do?id=5303

[7] Vnl (n.d.). The opportunity for mobile operators. Available: http://www.vnl.in/solutions/the-opportunity/

[8] A. L. Hammond (2008, June). Mobiles Telecoms in rural areas. I4d (Information for development) magazine, VI(6). Available: http://www.i4donline.net

[9] LIRNEasia (2009, February 10). India's rural millions: Connected? Available: http://lirneasia.net/wp-content/uploads/2009/04/coai-tabop3-mumbai-10feb09_final2.pdf

ANNEXURE I
ePayment of Pensions and NREGS Wages: Experience of ZMF in Andhra Pradesh[1]
The e-Government applications discussed in this case refers to two important social services provided by the central Government. One such scheme is the National Old Age Pension (NOAP) Scheme. With the ageing of the population, old age social security assumes special significance. Under the NOAP, Central Assistance of Rs 200/- per month is granted to destitute older persons above 65 years. The scheme also covers the physically handicapped and widows.

The second scheme is the National Rural Employment Guarantee Scheme (NREGS) that guarantees wage employment on public works to any adult who is willing to do unskilled manual work, subject to a guaranteed employment for 100 days per household per financial year. The objective of the scheme is to enhance the livelihood security of the people in rural areas by generating wage employment through works that develop the infrastructure base of that area. The choice of works suggested addresses causes of chronic poverty like drought, deforestation, soil erosion etc.

Application Context
The Government of Andhra Pradesh is implementing the Andhra Pradesh Rural Employment Guarantee Scheme (APREGS) in 657 mandals[2] across 13 districts of Andhra Pradesh. An end-to-end ICT solution developed by TCS is also being used by the state government to help in simplifying activities like issue of job cards to rural households, identification of work to be undertaken, generation of work estimates, work execution and wage payment. The payments made to the beneficiaries are not standard payments and will vary depending on the outputs of the work done.

The Central government mandate to States requires that they need to pay wages through savings bank accounts of all workers involved in NREGS. This was done with the aim of bringing in transparency and ensuring that there were no irregularities due to the presence of intermediaries. Prior to this mandate, there had been reports of corruption and reduced wages or non-payment of wages to workers. From October 1, the "payment of wages in cash would be considered illegal"[3]. Nearly 29 million savings accounts with banks and post offices have already been opened across the country. More than Rs 200,000 million has been spent under NREGS since its launch in February 2008, out of which, more than Rs 150,000 million is the wage component.[4]

Pensions were paid by the village secretary who used to cash a consolidated cheque issued by the district office to be paid to the individual pensioners. The payments were made in the village panchayat office. Usually the full amount was not paid on some pretext or the other. The village secretary was seen to invest time and effort to collect the pension on behalf of the pensioners. This provided some justification to the village secretary for withholding a part of the money from the payment to many pensioners. The disbursement was done within a very short time window inconveniencing a large number of pensioners. Rarely was any amount refunded to the government because it could not be disbursed. Given the power imbalance between the government officials and illiterate pensioners, nobody filed a formal complaint.

In the case of NREGS payments, payees had to open an account with the nearest post office. The payments

[2] Mandals are the lowest institutionalized tier of the state administration in Andhra Pradesh below the district and taluk. About 25 villages constitute a Mandal.
[3] http://www.empowerpoor.com/print.asp?report=815 accessed on 6th November 2008
[4] http://www.jrf.org.uk/knowledge/findings/socialpolicy/2234.asp accessed on 2nd November 2008

were made by the sub post offices, which normally serve a cluster of four to five villages. It took a few trips for the sub post office official to get the funds for disbursement from the main post office branch. To avoid frequent trips to the sub post office, one to two persons were authorized to act as intermediaries to collect the payment from the sub post office on behalf of a group of workers. Many of the workers did not receive the full amount due to them as authorized persons took part of the money.

A New Approach

One of the finest examples of an e-Government project that serves rural populations is the Zero Mass Foundation project to credit the monthly pension (of the aged, widows, handicapped persons) of rural pensioners into their bank account and facilitate the withdrawal of funds from the account without requiring them to go to a distant bank branch.

This project could be implemented because the Reserve Bank of India under its Financial Inclusion Program permitted scheduled banks to appoint Business Correspondents (BC) as bank agents who were authorized to open an account, and to perform deposit and withdrawal transactions from a beneficiary account. RBI through its notification (APPENDIX-I) authorized NGOs, post offices, e-Kiosks and ex-servicemen to act as Business Correspondents.

This case describes the payment of pensions in ten districts of Andhra Pradesh (AP) by the Commissionerate of Rural Development in which six banks (State Bank of India, Union Bank of India, Axis Bank, Andhra Bank, State Bank of Hyderabad and Andhra Pradesh Gramin Vikas Bank) have partnered with a technology company called "A Little World" (ALW) and the Zero Microfinance and Savings Support Foundation (ZMF), a Section 25[5] company closely affiliated to ALW.

Organizational Components of the System

ZMF acts as the BC for the six banks which have been assigned specific districts for the purpose of making pension and NREGS payments in Andhra Pradesh, and as BC for 25 banks in its operations country-wide. In AP, ZMF has set up offices in every district covered under the program. In each district several Customer Service Points (CSPs) have been created by selecting women from the local Self Help Groups (SHG) who are given a kit consisting of a special mobile phone and accessories. These kits can process banking transactions such as deposits and withdrawals electronically by real-time exchange of information with the bank's database at the backend. Customers are provided banking services at a specified location (usually the Panchayat Office) within each village. The SHG acts as a guarantor for the member selected as the CSP.

---

[5] A Section 25 company can be established for promoting commerce, art, science, religion, charity or any other useful objective, provided the profits are applied for promoting only the objectives of the company and not distributed as dividend among its members.

District offices handle the task of selecting and training CSPs, providing kits to CSPs, maintaining the kits in the field, collecting and storing enrollment forms and data entry of information entered in the forms, liaising with the local bank branch for withdrawal of cash for disbursement, deposit of excess cash after disbursement and movement of cash from the banks' branches to the CSPs.

Technology Components of the Remote Banking (Branch-less) Solution
For the customer-end, A Little World Pvt Ltd (ALW) has developed an application that runs on a special GPRS mobile phone that has been enhanced by a chip developed by NXP[6] which enables secure data communication between the phone and the RFID smart card using Near Field Communication (NFC) technology invented by NXP. A biometric scanner to read finger prints and a printer can also connect to the mobile phone using wireless communication. Detailed specifications are given in the box below. A data center in ALW headquarters deploying multiple servers can interface with multiple front-end devices such as NFC phones with CSPs on the one end and with servers of different banks participating in the venture at the other end. Data can be transferred from the front-end device to the ALW data center through a GPRS service from any service provider.

Detailed Specifications of Technology Components
- At the frontend, the Point of Transaction (POT) terminal consists of 3 components: Reader (indigenously designed), Printer and RFID Smart Card, which communicate through NFC protocol.
- POT terminal can handle transactions both in the online and offline mode.
- Following standards are followed: Bio-Metric - ISO 19794; Smart Card - ISO 14443
- The POT terminal application runs on General Purpose Mobile Connectivity. POT communicates with the backend server through GSM/GPRS. Communication is secured through VPN.
- A data center located at Navi Mumbai serves as the backend.
- Backend subsystem comprises Banking Software using MIFOS and MLS for financial switch. Backend interface to the banks has already been established
- Finger print image (without compression) and the template are stored in the enrollment system.

Key Processes in Pension and NREGS Payments
1. Enrollment: During this step, the Department of Rural Development provides a list of eligible beneficiaries for the Social Security Pensions (SSP) scheme and the NREGS to the appointed banks. The concerned bank or financial institution conducts an enrollment camp in the village with the help of ZMF. The Gram Panchayat and village officers assist the organization in identification of beneficiaries. Finger prints, photo and other personal

---

[6] NXP is a semiconductor company founded more than 50 years ago. The company creates semiconductors, system solutions and software for use in TVs, set-top boxes, identification applications, mobile phones, cars and a wide range of other electronic devices.

details of the beneficiary are captured. Thereafter, a bank account for the beneficiary is opened.

Before undertaking the enrollment process, ZMF undertakes a village level survey to select the CSP. The CSPs are women selected from the local SHG, are literate (Class 10) and usually married to males from the local community. Selected CSPs are trained on the mobile kit and in cash management. Government departments dealing with the NREGS Schemes collect data on the likely individual beneficiaries. The list of such beneficiaries is sent to the head office of the identified bank. Printed enrollment forms with part of the data related to specific beneficiaries are sent to ZMF. Such forms do not have the photograph and the biometric data of the intended beneficiaries. Compliance with Know Your Customer (KYC) norms[7] requires a photograph and verification of identity through documents such as a ration card or electoral card. Biometric identification helps in security of transactions.

The intended beneficiaries come to a specified location, where the ZMF team has the partly filled in forms. Each form has a unique number printed on the form and captured in a barcode on the form. After a physical verification of the required documents, the ZMF team captures a high-resolution photograph of the beneficiary using a mobile phone camera, six fingerprints using a biometric device, and the photograph of the form that has a unique bar-coded card that includes the selected bank name. The number is keyed in to the mobile device by the operator. The number uniquely identifies the customer and links all the associated data about the customer in the data base. The beneficiary keeps the bar-coded card as a reference. The entire data (up to 2 MB per person) is stored in the mobile device.

The enrollment data is stored on the mobile and is later downloaded to the servers of ZMF through a GPRS service. The data from the forms is digitized and transferred to the concerned bank's central branch in textual form as an electronic file. The central bank server passes the data to the link branch with the validated data of beneficiaries. The bank branch reviews the data and authorizes the opening of an account, which takes about three weeks. ALW then issues a photo ID card costing Rs.10-15 to the customer for which the cost is borne by the Bank.

Prior to the use of simple photo ID cards, an RFID card costing Rs. 65 per card used to be issued. The data collected during enrollment including the biometric identification was encrypted on the RFID card. The entire process is explained schematically in Figure 3. In case if the RFID Card was lost, the customer had to pay Rs. 100 to the bank with a request letter. Till the time the customer did not get a replacement card, the customer was not able to do any transactions. In case of loss of photo ID card, citizens need to come with the ZSN and to perform transactions. The operator also has the list of beneficiary-wise ZSNs. For this reason, every bank wants a simple photo ID card-based application as it is low-cost and the mobile device can store large amounts of data for authentication.
Enrollments are usually done in a campaign mode.

A cluster of ten villages with about 900 beneficiaries in each village may be covered in a single campaign. Normally five trained people with three kits are used for one campaign which lasts for about three days. Each helper is paid Rs 5-8 per enrollment, depending on the type of area. It has been difficult to enroll all the pensioners included in the list of beneficiaries provided by the government. Out of the pensioners' list, 70-80% people show up for enrollment. In case of NREGS, the proportions that showed up for enrollment is even smaller. In an urban area of Warangal, out of the 36,000 beneficiaries, only 18,000 could be enrolled in the first go. Through two more attempts of enrollment, the number could be enhanced to 22,500. When an enrollment campaign is conducted, an effort is made to enroll all the potential customers including pensioners, NREGS wage earners and those who do not belong to these groups but would like to avail of banking services.

---

[7] Mandated by the Reserve Bank of India for opening new accounts.

2. Monthly Payment Cycle: The government issues instructions to the banks for payments by providing the banks with the list of beneficiaries and the amount to be paid to each of the beneficiaries. The government also deposits the total amount to be paid in an account with the bank. The bank credits the account of the individual beneficiary and simultaneously debits the account of the government. The information on the updated balance in the beneficiary's account is transmitted to the CSP's mobile. The cash to be distributed is physically transported and delivered in the village to the CSP. Payments due to the beneficiary are completed within 5 days of the transfer of funds.

The CSP is available at a pre-designated government premise such as the Gram Panchayat building with her kit and a cash box to make the payments on designated dates. The CSP needs to do a biometric log in by capturing her finger prints thru the finger print reader, prior to starting transactions in a session.

The CSP's mobile has the details of the beneficiaries' account. When the beneficiary comes to withdraw money with his/her RFID card, the identity of the beneficiary is verified by touching the card to the mobile device (bringing the two in physical contact). In case of simple photo ID cards, once the ZSN is entered the device also pulls up the stored photo of the beneficiary. An index finger print is also captured on the biometric device. After validating the identity, the device asks for the amount to be withdrawn. The amount is input by the CSP. Based on the beneficiary's account balance the transaction is Okayed. The CSP touches the device to the printer to generate a receipt in duplicate. One copy is filed and the signature/thumb impression is taken on a separate list indicating amount paid to each beneficiary. Credit/debit transactions take place over a 128-bit SSL secure channel using the GPRS enabled mobile network. This protocol was selected because SMS based services do not have the required and mandated security.

NREGS payments are handled in a similar way. Government agencies in the field provide the list of wage earners and the amounts to be paid to their central office which in turn approves the payments by providing the list to the Banks. The banks then credit the wage to the wage earner's account from which the wage earner can withdraw whole or part of the wages as per his/her convenience.

On a daily basis, the BC/CSP uploads the date when disbursements are made. An MIS report on the disbursements is submitted to the government. Whenever the banks have a core banking solution, ALW develops an interface to exchange data with the banks' servers. In other cases banks can view the data from the ALW servers through a dial up connection or any other form of connectivity.

Extent of Usage of Mobile-Based CSP Banking
Table I indicates the current coverage of the mobile-based banking solution for financial inclusion by ZMF covering pension payees, NREGS wage earners and savings account holders. ZMF operates in 127 districts across 26 states in India. ZMF has appointed nearly 6,000 CSPs serving a total of 1.5 million NREGS payees, 0.7 million pensioners and nearly 0.7 million rural citizens who have opened accounts under the financial inclusion (FI) program. The bulk of the accounts are in ten districts of Andhra Pradesh, but there is significant pilot-level activity in Meghalaya, Uttarakhand, and West Bengal to demonstrate the workability of the solution. The real utility of the mobile-based system will be seen in the hilly regions of the country where establishing alternate fixed line communication system is proving to be difficult.

Economic Viability of the Mobile-Based Solution
The economic viability of the operations was analyzed using the data from operations of ZMF in Andhra Pradesh. Table II provides the data by districts for the activity levels under different programs.

For a multi-way partnership to work successfully, each partner must have complimentary skill set to bring to the table and the right incentive to participate. The following key stakeholders who are involved must each see a commensurate benefit for the effort/investments made into the system:

1. Central and State government agencies regularly make payments to citizens in rural areas. The benefits to these agencies are that full payments can be reached to the targeted beneficiaries without an intermediary pocketing a part of the payment; and targeting can be effective as ghost beneficiaries (such as people collecting payments from many sources or non existent people being paid) can be weeded out saving significant amounts of funds for the agencies. ZMF's experience in the last year indicates that in an enrollment drive about 60-70% of the listed beneficiaries are covered. At least a good part of the uncovered list may represent bogus pensioners.
2. Reserve Bank of India, NABARD[8], Commercial Banks, and Regional Rural Banks who are charged with expanding the financial inclusion of rural poor. Government agencies that need to make pension and NREGS payments through Banks provide such banks the opportunity to expand the FI program.
3. Technology companies like ALW that are engaged in technology innovations and look for large markets for their products and services. ALW is a venture funded company that has many innovations to its credit (see box below).
4. BCs like ZMF that are in the business of development and as NGOs must operate on a no-profit-no-loss basis. BCs incur several types of costs in the field operations and must generate enough revenues to cover costs and make a surplus for future investments in growth. The cost of operating the system in the field has the following components
   a. Cost of the electronic kit and the cash box for each CSP
   b. Payment to the CSP
   c. Cost of running a district office to support CSP operations
   d. License fee for the technology amortized over a number of CSPs
   e. Cost of managing the operations of a BC

A Profile of ALW Technology Innovations

ALW has got VC financing from Legatum Ventures, Dubai and ENAM, India. Some of the technologies developed by ALW are:
   a. MCHQ (now mChek): Mobile-to-mobile payment solution developed by ALW was sold off in mid-2006 to an independent SPV formed by two investors with a former Angel Investors in ALW.
   b. Go-Mumbai: Low-cost contactless smart cards (branded GO-Mumbai) for automatic fare collection used on high-tech validaters in BEST buses and platforms of local suburban railway stations sold to an independent SPV formed in May 2006. Over 600,000 Go-Mumbai cards have been issued in Mumbai until March 2008. ALW continues to retain exclusive rights for use of the Go-Mumbai in NFC mobile phones and Dual Interface SIMs.

---

5. SHGs and CSPs that are in the business of enhancing their incomes through micro enterprises.

In the current financial arrangement, the agencies disbursing the pension provide a flat transaction fee of 2% to the banks of which 1.75% is passed on to the BC. The CSPs are paid 0.5% of the value disbursed or Rs 500/- (whichever amount is higher). From her earnings the CSP has to share 20% with the SHG.

Rural citizens who receive pensions are perhaps the largest gainers in the new system. The bulk of the payees are illiterate and poor and do not have any bank accounts. Nearly 90% of the pensioners are unskilled workers and 60% are women. Nearly 60% belong to the Scheduled Castes and Tribes. Those who have bank accounts in a nearby branch save on travel cost and wage loss incurred in going to a bank branch which may on an average be 10-20 kilometers away. If the pension is collected from the panchayat office bearers than pensioners invariably do not receive the full amount.

---

[8] National Bank for Agriculture and Rural Development (NABARD) – NABARD was set up as an apex Development Bank with a mandate for facilitating credit flow for promotion and development of agriculture, small-scale industries, cottage and village industries, handicrafts and other rural crafts in India. Source: (Website of NABARD)

Therefore, from a development perspective the m-Government initiative that is being tested in Andhra Pradesh and many other states should be expanded to all the states for a variety of payments. The ZMF project indicates that it can be run and managed at a large scale. However, it needs to be economically viable for the BC for the program to attract such organizations for delivery in other states.

The economics of running the operations per CSP are calculated in Table III. It is evident that at the current rate of commission of 1.75%, and assuming full activity of payment for all enrolled payees, there is a large gap between the cost and revenue of the BC. The current rate of cost recovery for BCs is 71 percent (revenue of Rs 2,129 per CSP and a cost of Rs 3,000 per CSP).

There are many ways in which the operations of ZMF can be made viable. The transaction fee paid to them can be fixed at a level that can cover the costs of operations. A transaction fee of 3.0% of disbursement can make the operation viable at current levels of activity per CSP. This can be seen as a fair compensation when compared to the transaction fee of Rs 6-7 paid out per transaction to eSeva[9] rural for collecting bill payments.[10] The collection of a bill is a less complex transaction not requiring any kind of identification of the payer. A banking transaction is more complex in terms of the tasks that need to be performed at the customer interface. The situation is anomalous as two different agencies of Andhra Pradesh government pay completely different amount of transaction fees to two different agencies. A consistent policy needs to be evolved with some parity across different applications.

In the case of eSeva, it is not easy to prove that the electricity company's gains per transaction are higher than the transaction fee that it pays to the private partner. In case of ZMF, the gains to the government are significantly higher because of the subsidies saved on account of fraudulent payments.

There could be another source of revenue for ZMF if a small fee could be levied on the payee. This may be politically difficult to implement although the economic justification is strong. In comparison to the earlier process the payees save on travel cost, and gain by getting full payments. The total gain could be several times the small fee of Rs 2 per payment that could make the entire process viable.

The operation can also become viable if the banks start providing full banking functions such as loans/deposits through the CSPs. The additional commission earned through such activities will augment the income of CSPs and contribute to the revenues of the BC. However, a CSP may find it difficult to handle more than 800-900 customers, even if each customer does one transaction in a month.

Looking Ahead
Looking ahead, the expansion of pension/NREGS payment services is contingent upon attaining economic viability for the operations from the perspective of the BC. The concerned partners are discussing the issue but as yet no solution has emerged. The resolution must come from some new policy initiatives recognizing the role of m-Government. These are discussed briefly in the main paper.

---

[9] eSeva project in Andhra Pradesh had established 250 urban centers and 1000 rural centers to provide under one roof nearly 135 electronic services such as payment of utility bills, issue of birth/death certificates and receiving application for passports.
[10] Bhatnagar, S. (2006). Electronic Delivery of Citizen Services: Andhra Pradesh eSeva Model. In Vikram K Chand (Ed.), *Reinventing Public Service Delivery In India: Selected Case Studies*, Pp. 95-124. New Delhi: Sage Publications.

APPENDIX I

All Scheduled Commercial Banks (including RRBs) & Local Area Banks

Dear Sir,

Financial Inclusion by Extension of Banking Services – Use of Business Facilitators (BFs) and Business Correspondents (BCs)

1. Please refer to our circulars DBOD.No.BL.BC.58/22.01.001/2005-2006 dated January 25, 2006 and DBOD.No.BL.BC.72/22.01.009/2005-2006 dated March 22, 2006 on the above subject.

2. Based on queries received from certain banks, we had clarified that there is no objection to banks engaging individuals as Business Facilitators (BFs) depending on the comfort level of banks, subject to their taking adequate precautions and conducting proper due diligence before engaging individuals as BFs.

3. In the light of the announcement made in paragraph 92 of the Budget Speech 2008-2009 by the Hon'ble Finance Minister, Govt. of India, it has been decided to permit banks to engage retired bank employees, ex-servicemen and retired government employees as Business Correspondents (BCs) with immediate effect, in addition to the entities already permitted, subject to appropriate due diligence. While appointing such individuals as BCs, banks may ensure that these individuals are permanent residents of the area in which they propose to operate as BCs and also institute additional safeguards as may be considered appropriate to minimize agency risk.

4. Further, with a view to ensuring adequate supervision over the operations and activities of the BCs by banks, it has been decided that every BC will be attached to and be under the oversight of a specific bank branch to be designated as the base branch. The distance between the place of business of a BC and the base branch, ordinarily, should not exceed 15 Kms in rural, semi-urban and urban areas. In metropolitan centres, the distance could be up to 5 kms. However, in case a need is felt to relax the distance criterion, the matter can be referred to the District Consultative Committee (DCC) of the district concerned for approval. Where such relaxations cover adjoining districts, the matter may be cleared by the State Level Bankers' Committee (SLBC), which shall also be the concerned forum for metropolitan areas. Such requests may be considered by the DCC/SLBC on merits in respect of under-banked areas or where the population is scattered over large area and where the need to provide banking services is imperative but having a branch may not be viable, keeping in view the ability of the base branch of the bank making the request to exercise sufficient oversight on the BC.

5. Where currently BCs are operating beyond the distance limits specified above, DCC/SLBC may be kept informed and steps may be taken to conform to the stipulated limits within six months time, unless specific approval is accorded by the DCC/SLBC on the grounds indicated in paragraph 4 above.

6. Needless to add, in the context of scaling up of BF/BC model which is a huge challenge given the size of the country, banks should bring to the notice of RBI any important issues to facilitate taking prompt corrective steps. The implementation of the BF/BC model should be monitored closely by controlling authorities of banks, who should specifically look into the functioning of BFs/BCs during the course of their periodical visits to the branches. Further, banks should also put in place an institutionalized system for periodically reviewing the implementation of the BF/BC model at the Board level.

Yours faithfully,

(P.Vijaya Bhaskar)

Chief General Manager

Table I: Scale of Operations of the Zero Mass Foundation (India-wide)

State	Number of districts	Number of villages	Number of CSPs[1]	Number of NREGS customers	Number of SSP[2] customers	Number of TFI[3] account holders
Andhra Pradesh	16	5,374	5,193	1,546,959	728,395	458,719
Assam	7	68	33	0	0	19,452
Bihar	9	87	54	0	0	38,125
Chhatisgarh	1	1	1	0	0	892
Dadra & Nagar Haveli	1	55	11	9,141	385	6
Delhi	4	20	18	0	0	5,749
Gujarat	3	46	46	0	0	11,689
Haryana	2	4	2	0	0	9
Himachal Pradesh	3	1,230	42	0	8,617	383
Jharkhand	3	22	20	0	0	14,513
Karnataka	9	26	17	42	500	8,932
Kerala	1	3	3	683	0	1
Madhya Pradesh	7	93	144	11,270	283	25,459
Maharashtra	6	22	20	0	0	39,192
Meghalaya	1	352	20	0	0	6,707
Mizoram	3	48	21	0	0	3,758
Orissa	2	12	5	0	0	0
Punjab	11	36	70	2	0	3,970
Rajasthan	5	20	18	38	0	6,458
Tamil Nadu	7	94	87	0	0	14,456
Uttar Pradesh	7	78	35	1,165	0	15,774
Uttarakhand	10	446	88	0	208	26,009
West Bengal	9	1,043	120	0	0	6,735
Total	127	9,180	6,068	1,569,300	738,388	706,988

[1] Customer Service Points
[2] Social Security Pension
[3] Total Financial Inclusion

Table II: Activity Level in Ten Districts of Andhra Pradesh

District	GPs[1]	CSPs[2]	SSP[3]						NREGS						TFI[4] accounts created	Total
			No. of GPs in which enrollment started	Target	Enrolled	No. of GPs in which transactions started	Current SSP pensioners	Current SSP amount	No. of GPs in which enrollment started	Target	Enrolled	No. of GPs in which transactions started	Current NREGS wage earners	Current NREGS amount		
Chittore	286	286	271	67,682	36,043	208	48,400	11,248,300	271	173,644	123,625	19	18,487	7,179,761	61,824	221,492
East Godavari	228	260	228	77,909	65,977	178	48,914	11,459,500	228	230,024	150,697	0	3,536	1,228,716	40,430	257,104
Karimnagar	74	74	45	9,198	8,299	45	9,576	2,340,500	45	20,958	15,255	8	14,892	7,558,926	13,332	36,886
Mahaboobnagar	755	857	715	229,273	90,017	351	99,099	23,029,500	705	586,492	242,977	2	1,233	127,292	48,553	381,547
Medak	708	762	648	184,565	106,495	293	76,242	17,851,200	648	345,522	201,578	12	19,694	9,705,322	86,609	394,682
Warangal	861	958	755	300,403	192,542	440	151,363	35,913,500	721	409,706	380,218	260	38,240	11,400,102	39,989	612,749
Kadapa	829	968	806	251,619	128,537	95	24,870	5,785,200	781	344,328	207,741	1	200	57,103	16,990	353,268
Vizianagaram	928	1,068	926	281,508	139,161	58	19,911	4,832,400	926	496,930	285,310	0	0	0	12,442	436,913
Nalgonda	1,182	1,310	46	314,428	6,226	0	0	0	46	521,060	8,338	0	0	0	0	14,564
Khammam	789	987	14	251,199	0	0	0	0	14	801,754	0	0	0	0	0	0
Total	6,640	7,530	4,454	1,967,784	773,297	1,668	478,375	112,460,100	4,385	3,930,418	1,615,739	302	96,282	37,257,222	320,169	2,709,205

[1] Gram Panchayats
[2] Customer Service Points
[3] Social Security Pension
[4] Total Financial Inclusion

Table III: Economic Viability for Zero Mass Foundation

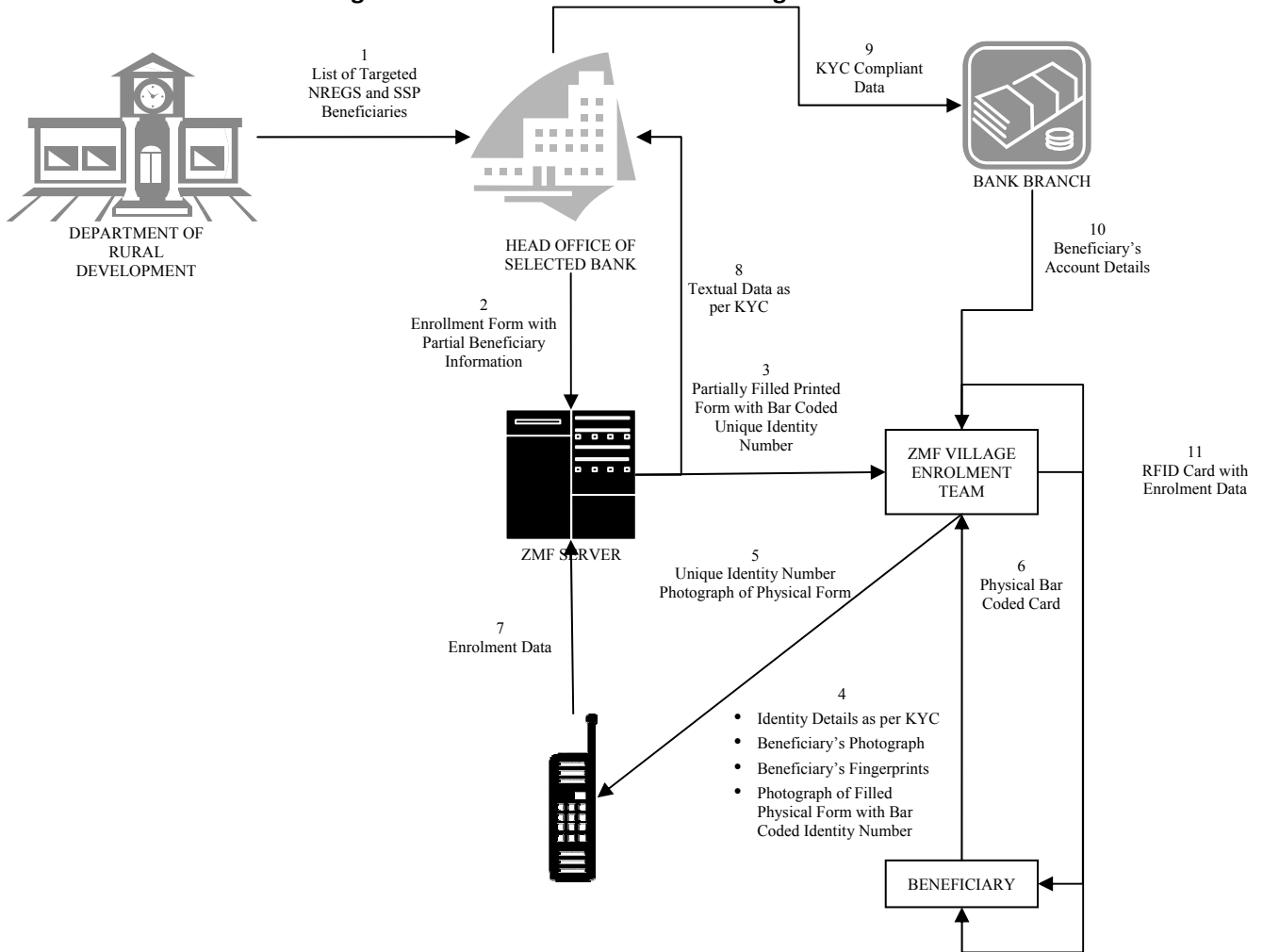| *Calculation of cost per CSP per month*		*Calculation of revenue per CSP per month*		
Number of CSPs per district	750	Enrollment of SSP pensioners	80%	
Cost of the electronic kit and the cash box for each CSP (Rs)[1]	450	Enrollment of NREGS workers	60%	
Cost of district office support to CSP (Rs)[2]	1,333	Number of SSP pensioners per CSP	261	
		Number of NREGS workers per CSP	522	
License fee for the technology amortized over a number of CSPs (Rs)	50	Average pension per SSP pensioner (Rs)	235	
Cost of managing the operations of a BC (Rs)[3]	667	Average wage per NREGS worker (Rs)	387	
Operational cost of the mobile (Rs)	500			
Total cost (Rs)	*3,000*		Current	Proposed
		Rate of commission	1.75%	3.0%
		Commission earned per CSP (Rs)	2,981	5,110
		Earning of CSP (Rs)	852	1,460
		Commission retained by BC per CSP	2,129	3,650

---

[1] It has been assumed that the electronic kit and the cash box would cost Rs 22,000 and would need to be replaced after 4 years.
[2] It has been assumed that a total amount of Rs 1,000,000 is paid (every month) as salary to a staff of around 60, which includes field supervisors.
[3] Total monthly cost has been assumed to be Rs 500,000.

Figure 3: Schematic Flow of Data during Enrollment[1]

1
List of Targeted
NREGS and SSP
Beneficiaries

9
KYC Compliant
Data

DEPARTMENT OF
RURAL
DEVELOPMENT

HEAD OFFICE OF
SELECTED BANK

BANK BRANCH

8
Textual Data as
per KYC

10
Beneficiary's
Account Details

2
Enrollment Form with
Partial Beneficiary
Information

3
Partially Filled Printed
Form with Bar Coded
Unique Identity
Number

ZMF VILLAGE
ENROLMENT
TEAM

11
RFID Card with
Enrolment Data

ZMF SERVER

5
Unique Identity Number
Photograph of Physical Form

6
Physical Bar
Coded Card

7
Enrolment Data

4
• Identity Details as per KYC
• Beneficiary's Photograph
• Beneficiary's Fingerprints
• Photograph of Filled
  Physical Form with Bar
  Coded Identity Number

BENEFICIARY

---

[1] Numbers indicate the sequence of data flow