



2016

IT'S (NOT) ALL ABOUT THE MONEY
MOBILE MONEY AND INNOVATION AT BRAC

JESSICA MECKLER UNDER THE SUPERVISION OF
PROFESSOR KIM WILSON, THE FLETCHER SCHOOL,
AND WITH THE SUPPORT OF MARIA MAY, BRAC

Table of Contents

Executive Summary	3
The Innovation Fund for Mobile Money Story	5
Bangladesh: Country Profile and Demographics	8
The Establishment of Mobile Money in Bangladesh	8
BRAC: On the Path to Poverty Alleviation in Bangladesh.....	9
The Social Innovation Lab: Facilitating Innovation at BRAC	11
Exploring the Incorporation of Mobile Money into BRAC Programs: The Good and the Bad	12
A. Challenges Uncovered	13
B. The Potential Costs of Mobile Money	14
SIL’s First Steps	17
Initial Challenges of the Innovation Fund	17
A. Generating Excitement in BRAC	17
B. Connecting with bKash	20
C. Creating the Technology	21
Going Forward:.....	24
Exhibits	26

Executive Summary

In 2007, M-PESA, a mobile payment service for the unbanked, was launched in Kenya. Within the first month, over 20,000 M-PESA clients registered for the service. This interest indicated an unexplored area with great potential in the field of financial services.¹ After M-PESA, digital financial services and mobile technology quickly gained popularity as a new, transparent, and efficient means to alleviate poverty. The benefits of mobile money seemed plentiful. They presented a means to circumvent the perennial issues of delivering financial products to poor communities in rural areas. Suddenly the geographic challenges of bad roads, inclement weather, and the high costs of maintaining operations in rural areas seemed to be approaching their end – in theory.

In reality, the hype of mobile money fast exceeded proof of the effects of mobile money on the financial lives of the poor.² By 2013, mobile money services were available in most developing nations and emerging markets, with approximately 219 live mobile money services available in 84 countries worldwide.³ The arrival of mobile money in Bangladesh was inspired by the growth of mobile money in Kenya. Bangladesh's prominent mobile money provider, bKash, was launched in 2011. By the end of 2013, bKash had registered 11 million accounts⁴. The rapid growth of bKash led CGAP to estimate that bKash was the fastest growing mobile financial services business in 2013.⁵

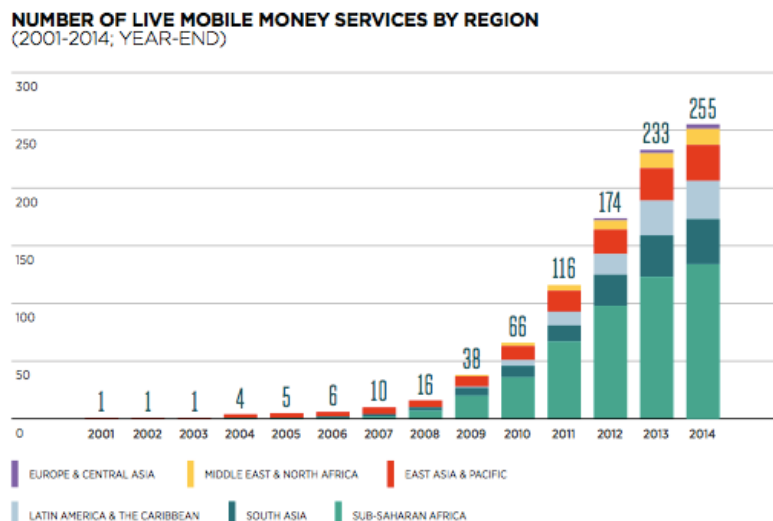


Figure 1: Growth of Mobile Money Services Worldwide⁶
(Graph from the *State of the Industry: Mobile Financial Services for the Unbanked 2014*.)

Rapid growth in Bangladesh, as elsewhere, posed many questions. What would spur faster adoption of mobile money payment options in place of cash in existing development projects? Projects and programs could be built around mobile money, but what would it take to successfully integrate mobile money into the existing systems of large development organizations? Could mobile money replace cash in programs designed to run efficiently with cash? What would it take to change the implementation, data collection, and financial models of these organizations? Understanding how the

integration of mobile money services affects organizations is vital to the overall success of the technology in the development sector. Given the successful start of mobile money through bKash, Bangladesh is an ideal place to explore these questions of mobile money in development.

To answer these questions, the Bill & Melinda Gates Foundation joined forces with BRAC. BRAC is one of the world's largest non-governmental organizations and a respected actor in the fight against poverty. Headquartered in Dhaka, Bangladesh, BRAC programs address the myriad aspects of poverty alleviation: education, health, microfinance, legal and human rights, gender, and disaster relief. In September 2013, the Bill & Melinda Gates Foundation provided BRAC's Social Innovation Lab (SIL) with a three-year grant of \$2.6 million to create an Innovation Fund for Mobile Money. The goal of the Innovation Fund was triple-fold:

- Increase the adoption of digital financial services at BRAC, particularly in service delivery;
- Increase the adoption of digital financial services by BRAC clients; and
- Contribute to the global discourse on digital financial services.

Within the first year of the grant, SIL had uncovered a number of hurdles that organizations must address before mobile money can be integrated successfully into existing programs. Large organizations, especially well-established ones like BRAC, designed their systems to operate with physical cash. Transitioning to digital cash required a great deal of inter-organizational communication and adjustment. Primary lessons that SIL learned were:

- The importance of stakeholder buy-in, both internal and external to the organization;
- Clear communication and goal-sharing with mobile money service providers; and
- The convenience of team members who can develop software targeted to program needs.

It was not an easy year. Despite the difficulties, the first year of the grant saw the start of seven mobile money pilot projects and an increasing interest in mobile money within BRAC operations. Even then, other questions – such as whether or not smaller organizations with less funding could handle the transition – remained. This case study covers the first year of the SIL's mobile money projects. It is intended to serve as a learning tool to guide organizations that aim to incorporate mobile money into existing organizational structures.

The Innovation Fund for Mobile Money Story

It was October of 2014. Maria May stared out her office window, viewing the controlled chaos of Dhaka, Bangladesh sprawl out before her. As the Senior Program Manager of SIL, she pondered the next steps for her division. SIL had received a grant of \$2.6 million from the Bill & Melinda Gates Foundation to support an Innovation Fund for Mobile Money. Now her team faced the task of incorporating mobile money into existing BRAC programs through a variety of pilot projects in different departments. Mobile money, while steadily gaining popularity in Bangladesh, had not yet been widely integrated into BRAC programs. A few initiatives had started, but mobile money had not been used at any meaningful scale at BRAC. Now, in 3 years' time, SIL hoped to support BRAC in reaching 50,000 households with mobile money. The success of this initiative would demonstrate that mobile money could become an effective and scalable tool for development projects in Bangladesh. SIL was also tasked with sharing the successes and challenges of their pilot projects with the international development community.

SIL had the funds to promote mobile money at BRAC and a team dedicated to the project. What should they do to spur the organizational adoption of mobile money? SIL began by engaging BRAC employees. To spark interest and generate excitement about mobile money at BRAC, the inaugural event of the Innovation Fund was the Innovation Fund Challenge. The Innovation Fund Challenge was an open call for ideas that ran from March 6 through April 10, 2014. The contest invited BRAC staff and interested outside parties to think of ways to integrate mobile money into BRAC's operations and submit ideas for pilot projects. Programs with the top ideas would be selected to receive a year's support for a pilot project from the Innovation Fund. Staff members voted online for their top choices. A panel of external judges made recommendations. The SIL team then confirmed with BRAC directors that they would be interested in pursuing the ideas through longer written proposals. On June 1, 2014, a judging panel comprised of BRAC senior management reviewed the top selections. They narrowed down the options to seven ideas. These seven pilot projects represented the broad range of social issues that BRAC tackles in its poverty alleviation work.

BRAC Department	Program Mission	Mobile Money Application	Potential Benefits from Mobile Money
Integrated Development Programme	<ul style="list-style-type: none"> Address poverty, malnutrition, and health issues in the <i>haors</i> and <i>chars</i> regions of Bangladesh⁷ 	Digitize conventional cash streams at branch offices	<ul style="list-style-type: none"> Diminish the necessity of frequent transportation Increase the efficiency of microfinance operations for staff and clients Decrease security risks associated with carrying large sums of cash
Microfinance Programme	<ul style="list-style-type: none"> Ensure that poor and vulnerable populations have 	Enable clients to pay annual insurance	<ul style="list-style-type: none"> Increase poor and vulnerable populations'

	<p>access to financial products</p> <ul style="list-style-type: none"> • Assist households move up and resist external shocks⁸ 	<p>premiums through mobile money</p>	<p>access to micro-insurance products</p> <ul style="list-style-type: none"> • Avoid the need of monitoring cash transactions and other additional work by branch accounts officers
BRAC University's Institute of Educational Development	<ul style="list-style-type: none"> • Improve quality, equity and efficiency in the education⁹ • Provide education to underprivileged children at their Schooling, Sexual Reproductive Health and Rights, and Counseling for the Children of Post-Primary Education (SSCOPE) Schools 	<p>Allow parents to pay monthly SSCOPE schools fees through mobile money on a flexible basis</p>	<ul style="list-style-type: none"> • Decrease the burden of travelling for parents • Decrease workload for staff and eliminate the need for staff to keep track of the complicated financial systems • Increase parents' ability to pay fees on a flexible basis • Increase transparency of SSCOPE financial transactions
Adolescent Development Programme	<ul style="list-style-type: none"> • Support adolescents in retaining literacy rates and life skills beyond school • Educate adolescents on social and health-related issues¹⁰ 	<p>Utilize mobile wallets to collect savings in adolescent savings groups</p>	<ul style="list-style-type: none"> • Increase youth access to savings products • Increase adolescent financial awareness
Health, Nutrition, and Population Programme	<ul style="list-style-type: none"> • Provide accessible and affordable healthcare services to vulnerable populations • Support maternal, neonatal, and child health • Address systemic health issues such as TB and malnutrition¹¹ 	<p>Digitize the distribution of incentive payments to a portion of community health workers</p>	<ul style="list-style-type: none"> • Facilitate the speedy transfer of incentive payments • Decrease security risks associated with carrying large sums of cash • Automatically generate payment due from performance data and reduce manual calculations for staff
Disaster, Environment, and Climate Change Programme	<ul style="list-style-type: none"> • Enhance BRAC's institutional capacity to respond to natural disasters • Build competence at the community level on disaster preparedness • Increase coping ability during natural disasters¹² 	<p>Develop a disaster relief voucher system based on mobile payments to merchants</p>	<ul style="list-style-type: none"> • Decrease the amount of time needed to distribute goods during times of emergency

Disaster, Environment, and Climate Change Programme	<ul style="list-style-type: none"> • Enhance BRAC’s institutional capacity to respond to natural disasters • Build competence at the community level on disaster preparedness • Increase coping ability during natural disasters¹³ 	Establish a mobile disaster relief fund through a mobile wallet for in-country donations	<ul style="list-style-type: none"> • Enable Bangladeshi citizens to easily make donations to BRAC • Enable BRAC to mobilize funds to respond to small scale disaster such as slum evictions, fires, and floods that do not receive international media attention
---	--	--	--

Figure 2: Innovation Fund for Mobile Money Pilot Project Finalists

These seven projects created the foundation of the larger goal of the Innovation Fund for Mobile Money: to pave the way for greater utilization of mobile money systems at BRAC and to use the benefits of a digitalized system to improve service delivery. These benefits include more accessible data and increased transparency. The Bill & Melinda Gates Foundation “aims to play a catalytic role in broadening the reach of robust, open, and low-cost digital payment systems, particularly in poor and rural areas – and expanding the range of services available on these platforms.”¹⁴ The extensive network of payment streams within BRAC operations made collaboration between the Bill & Melinda Gates Foundation and BRAC an exciting prospect for both organizations. Lynn Eisenhart, Senior Program Officer at the Bill & Melinda Gates Foundation, stated that “Bangladesh is at the cutting edge of mobile money, with services like bKash already reaching over 15 million people. At the Bill & Melinda Gates Foundation, we can’t think of a larger, more nimble organization than BRAC to make this vision become a reality.”¹⁵ With complementing missions guiding the teams, the Bill & Melinda Gates Foundation and BRAC partnered to catalyze utilization of mobile money in the Bangladeshi development context. They also hoped that the partnership would guide the global development community on mobile money’s potential for effective use at scale.

SIL and the Bill & Melinda Gates Foundation were excited about the quality, diversity, and ingenuity displayed in the seven proposals. Each project raised new challenges to be faced in the Herculean task of switching from cash to mobile money. If successful, the projects would also provide new lessons to be shared with BRAC management, the Bill & Melinda Gates Foundation, and the international community. It was an exciting moment in SIL’s brief history and a potentially momentous shift in BRAC’s operations. However, Maria knew that the coming year would present a variety of obstacles for her small team. She wondered how to prepare for the forthcoming challenges. Ultimately, responsibility for implementation of the selected pilot projects would fall on individual programs and support departments. How would SIL help the seven pilot projects, headed by these different departments, smooth the transition to mobile money while gathering comprehensive data to present to BRAC management and the international community?

Bangladesh: Country Profile and Demographics

Home to 160 million people, the People's Republic of Bangladesh is a small, low-income country in South Asia.¹⁶ It is the eighth most populous country in the world.¹⁷ 43.3% of the Bangladeshi population live under the poverty line of \$1.25 per day.¹⁸

There are a plethora of domestic and international development programs functioning throughout the country to address extreme poverty. A variety of issues hinder these efforts. One major issue is poor infrastructure throughout the country; many people lack access to a reliable electricity grid, safe water, sanitary sewage disposal, sound roads, and connected transport networks.¹⁹ Frequent natural disasters, such as cyclones, floods, and landslides, create barriers to infrastructural improvement. Additionally, periods of political instability instigate unrest in the form of *hartals*, or strikes. Lastly, corruption is a significant problem.²⁰ Despite these hindrances, Bangladesh has made significant progress in its fight against poverty. The percentage of the population living under \$1.25 per day dropped from 70.2% in 1992 to 43.3% in 2010. Moreover, by 2013 Bangladesh had met a number of the Millennium Development Goals, including reducing headcount poverty, achieving gender parity in primary and secondary education, and reduction of the under-five mortality rate, among others.²¹

The successes seen in the Bangladeshi development sector are notable. However, life in Bangladesh remains difficult for those living below the poverty line. Obstructing factors continue to affect service delivery from development organizations such as BRAC.

The Establishment of Mobile Money in Bangladesh

Mobile money quickly captured the interest of the Bangladeshi market. The digital platform has enormous potential to enable organizations to reach Bangladesh's unbanked population. The challenges that hinder financial inclusion of vulnerable populations are rampant in Bangladesh. Participation in the formal financial sector indicates the difficulty formal institutions have in reaching these populations. In 2014, the World Bank found that only 29.1% of the Bangladeshi population over the age of 15 has an account at a financial institution. Of the poorest 40% of the population, the percentage of people over the age of 15 who have an account at a financial institution falls to 21.5%.²² However, mobile technology has a greater reach: as of 2014 there were 67.1 million unique subscribers in the mobile market in Bangladesh.²³ Furthermore, mobile money offers a safe, fast option for domestic remissions from migrant urban dwellers – such as garment factory workers and rickshaw drivers – to families living in rural villages. To tap into this potential, mobile financial service products were introduced to the Bangladeshi market in mid-2011. Since then, the central government has approved over 20 licenses for mobile financial services.²⁴ The most prominent service provider, responsible for over 80% of transactions, is bKash Limited.²⁵

Launched in 2011, bKash is part of the BRAC group. The BRAC group is comprised of the NGO itself and a series of 18 social enterprises pioneered by BRAC.²⁶ Major investors in bKash include BRAC Bank and the Bill & Melinda Gates Foundation.²⁷

bKash holds the market as the first and largest provider with over 11 million registered accounts by 2013.²⁸ bKash offers over 90,000 agent locations for cash-in and cash-out services in all 64 districts of Bangladesh.²⁹ As a subsidiary of BRAC, the company's mission is "to ensure access to a broader range of financial services for the people of Bangladesh."³⁰ There is a special focus on services for low-income communities and the expansion of financial services to a majority of the Bangladeshi population.³¹

NUMBERS OF REGISTERED AND ACTIVE CUSTOMER ACCOUNTS²⁸ BY REGION (DECEMBER 2014)²⁹

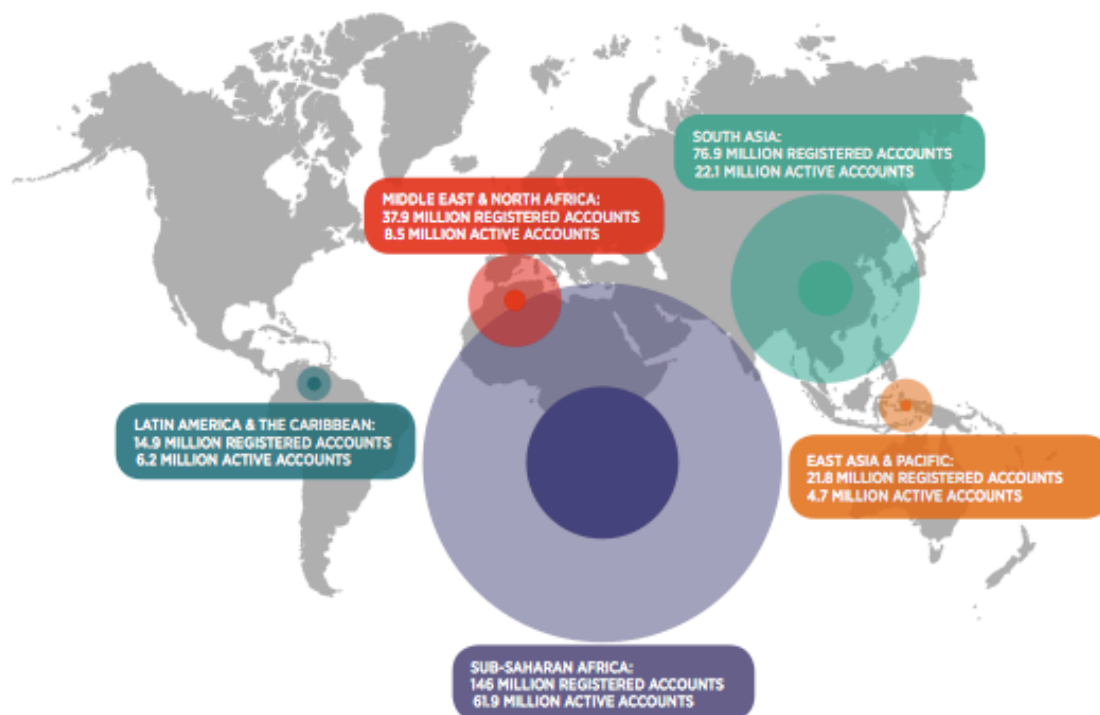


Figure 3: Regional presence of mobile money in registered and active accounts³²
(Figure from the *State of the Industry: Mobile Financial Services for the Unbanked 2014*.)

The number of registered mobile money accounts grew faster in Bangladesh than any other country in 2013.³³ bKash accounts are free to subscribers of 4 major Bangladeshi voice networks. The application process is relatively simple. To register, a new user must have a mobile phone, two photographs, and a copy of a national identification card.³⁴

BRAC: On the Path to Poverty Alleviation in Bangladesh

Established in 1972, BRAC is a development NGO headquartered in Dhaka, Bangladesh. The wide-reaching and active NGO is a ubiquitous household name in the country. *The Global Journalist* noted that "[BRAC] is an entity that reaches 138 million people directly through its programs, that provides health care to 92 million people, that employs

a growing staff of 122,000, and that has lent \$5 billion in micro-loans to over six million borrowers.³⁵

BRAC strives to create large-scale change through its economic and social programs. The organization is well known for its economic work in microfinance. However, reaching the poorest segments of society with financial products is difficult. There are a great number of challenges that can arise while attempting to expand financial accessibility. These challenges hinge on three compounding factors that lock people in a cycle of poverty: low incomes, irregular cash flows, and the ill-suited, inflexible nature of existing financial instruments.³⁶ The poor carefully manage their money to balance these three factors. They utilize the informal, semiformal, and formal financial institutions that are most useful for their purposes.³⁷ In order for microfinance institutions and development organizations to succeed in providing useful services to the poorest, microfinance institutions must address the constraints of poverty.

As a massive organization, BRAC can to address the needs of clients in a holistic manner. There are layers of programs to assist individuals and families as they improve their circumstances. Even so, the impact of formal financial products is limited on the lives of the poor for multiple reasons:

- Structures and procedures of financial institutions are complicated and intimidating.
- Understanding the vast amounts of paperwork and records is difficult for illiterate populations.³⁸
- Compared to informal savings methods, formal financial products can be expensive with complicated fee structures.³⁹
- Mistrust and community bias against the formal sector can bias the poor's perception of formal products and prevent usage.⁴⁰

Mobile money has the potential to simplify formal transactions and create flexible services that alleviate the strain between the constraints of poverty and institutional needs.

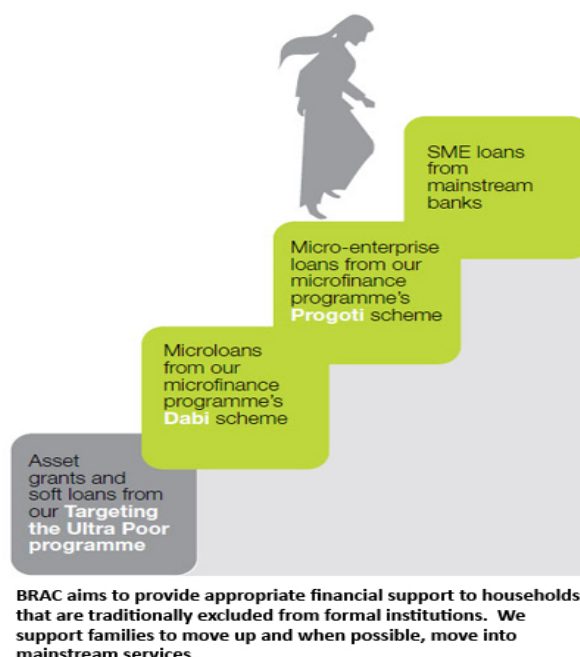


Figure 4: BRAC Layers of Financial Inclusion⁴¹

Correspondingly, interest in the application of mobile technology in development has grown. Since the enormous success of M-PESA in Kenya, mobile money and its uses in financial inclusion have grabbed the attention of governments, development agencies, and central banks. Hype has spread from Kenya's success to other nations, including Bangladesh. The concept of mobile money offers an intriguing solution to the common problems that formal financial institutions and microfinance institutions often face: distance, time, and expense. Establishing and maintaining branch offices in remote areas is often prohibitively expensive for formal and semiformal institutions. Furthermore, the time and expense that is required for rural populations to travel to the nearest branch limits access. In Bangladesh, where seasonal floods are common in many regions, transportation and infrastructure further hinder access; only 30% of Bangladeshi roads are paved. Additionally, a limited 40% of the rural population live within a 2-kilometer walk to the nearest bus station.⁴² Mobile money may alleviate the problems of access by overcoming the barriers of geography and infrastructure. Additionally, if mobile money reduces the cost of providing services, financial institutions may be able to adjust the cost structure of financial products. These factors could make financial services more available for poor populations.

It was with this potential in mind that SIL and the Bill & Melinda Gates Foundation partnered to explore the integration of mobile money at BRAC.

The Social Innovation Lab: Facilitating Innovation at BRAC

BRAC established SIL in 2011 as a support for "BRAC in realizing its strategy through increased awareness of relevant breakthroughs occurring around the world and creation of a more innovation-friendly environment for all staff."⁴³ SIL is an independent unit of

seven people that encourages and supports innovation and learning within existing BRAC programs. It is a hotspot for creative energy and an idea incubator. A core aspect of SIL's identity is its role as a facilitator and promoter of innovation occurring at BRAC. It is a unit that highlights organizational learning and aids inter-department connections. The SIL team focuses "on understanding the organizational systems and how they can better enable innovation."⁴⁴

By working with various departments, SIL fills a critical space necessary for fostering a culture of innovation at BRAC and encouraging the improvement of BRAC processes.

Exploring the Incorporation of Mobile Money into BRAC Programs: The Good and the Bad

When SIL began researching mobile money at BRAC in the fall of 2013, they first looked internally. They specifically analyzed the benefits and challenges that arose during a BRAC microfinance project that had incorporated bKash into its operations. Early on, bKash had received significant support on the ground from BRAC to establish its early agent network. BRAC began to utilize bKash in its microfinance program in 2012 to spur further adoption. In 13 branches, loan repayment for small and medium enterprise clients over bKash was mandatory. In these branches and others, BRAC clients could also deposit money into their savings via bKash. By 2014, the savings deposit option had expanded to 112 branches in 29 districts. BRAC hoped to make their processes more efficient, transparent, and safe for clients and staff by using bKash.

The savings pilot project showed client interest in bKash payments increase from 2.6% of clients using bKash in December 2012 to 25% in December 2013. Interest in bKash was maintained and continued to increase slightly in the pilot project districts through the beginning of 2014.

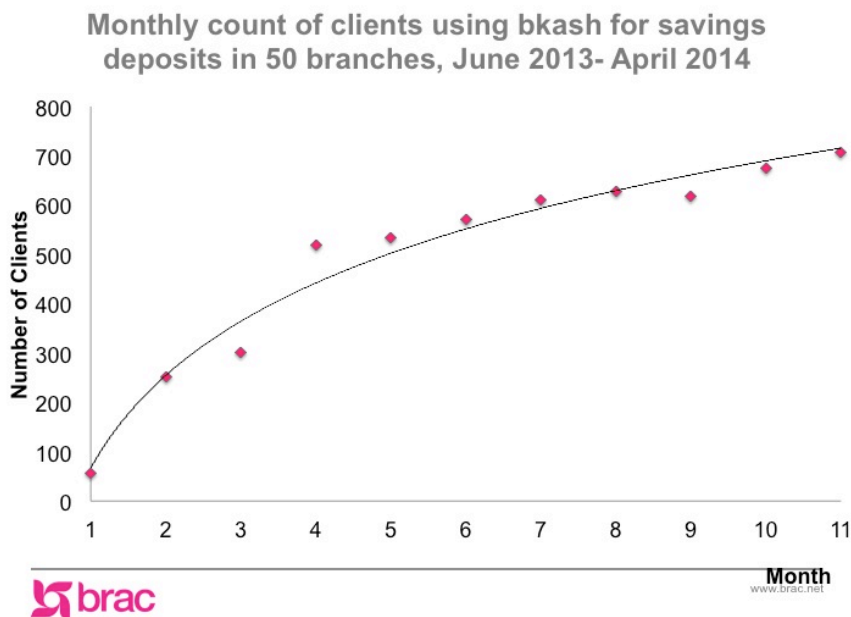


Figure 5: Microfinance Pilot Project – bKash Uptake Among Clients

Furthermore, BRAC branch accounts officers found certain advantages to using mobile money rather than cash:

- Less physical cash to handle
- Shorter lines at the branch office on collection days
- No need to count cash, saving time and lowering stress

The traditional cash system was time intensive. An internal SIL presentation described the work required of branch account officers as overwhelming: “We [account officers] have a start time but no end time. Not to mention weekends.”⁴⁵ Program organizers and field staff began to see the benefits of mobile money as a way to potentially circumvent these issues.

A. Challenges Uncovered

However, the microfinance pilot project also uncovered obstacles to success in BRAC programs. The most significant obstacles were client difficulties using bKash and staff reluctance around mobile money. The human element of mobile money – user comprehension and comfort – proved to be critically important to the success of mobile money uptake.

Low literacy rates amongst clients created issues with the technology interface. Language was a particularly difficult barrier to overcome. bKash utilizes English characters and numbers for the user interface, rather than Bengali. The foreign script was intimidating for first time users, many of whom were illiterate. Consequently, clients made mistakes as they typed in the transaction amount when sending money. They also required a great deal of time to complete transactions. This time tended to exceed the 90-second window allowed by the interface while making transactions, thus timing clients out of the system.

To compound these issues, clients also had difficulty remembering their PIN codes to access their mobile wallets. A great deal of education was required to help clients gain confidence and proficiency with the bKash system. Program officers demonstrated the system for clients multiple times. A user manual with pictorial descriptions was distributed for reference.⁴⁶ The challenges noted by BRAC program officers reflected wider country trends that emerged in Bangladesh as mobile money gained traction in the market.⁴⁷

Lack of comfort with the bKash system also fueled staff reluctance to integrate bKash into operations in the early months. The time and patience required for shifting to another system meant additional work for busy program officers. The staff themselves had to learn the system. Then they had to teach and reteach their clients how to use bKash. Dedication from headquarters was key to success. Constant communication between headquarters and field staff strengthened internal relations. Frequent field visits from headquarters staff helped field staff understand the new system. These communication channels conveyed BRAC's dedication to using the mobile money system at the pilot project branch offices.

Simultaneously, bKash became a household name in Bangladesh. No longer was the system relatively unknown to branch office staff and clients. As bKash built its brand, comfort with the system grew. Program officers enacted best practices, such as creating simple PIN codes for clients to use, that eased the workload of the pilot project. Once bKash became familiar to branch office staff and clients, branch accounts officers found that the new system offered important advantages that made daily work easier. Notably, they saw a decreased need to handle cash and a reduced number of client visits at the branch office. Once the system became familiar, accounts officers advocated accepting more payments for savings through bKash.⁴⁸

B. The Potential Costs of Mobile Money

The costs of using mobile money started to come to light in the microfinance pilot project. The bKash model has two types of mobile wallets: personal and merchant wallets. Personal wallets are opened by individuals and operate on the fee structure detailed in Figure 6. Merchant wallets are available for businesses and organizations like BRAC. Merchant wallets link to bank accounts and can only be used to receive money. Personal wallets are not linked to bank accounts. Personal wallets, as shown in Figure 6, have a variety of uses (sending money, receiving money, making payments, buying airtime for a mobile phone, etc.). The bKash fee structure is such that peer-to-peer transfers cost the sender 5 taka per transaction. Peer-to-business transfers are free for clients. Subsequently, it is free for clients to transfer money from their accounts to BRAC's bKash wallet. However, there is a fee for organizations – such as BRAC – to transfer mobile money to their bank account. Likewise, while cash-in services are free for all personal wallets, cash-out service fees from agents are 1.85% of the transaction amount. Cash-out fees from ATMs are 2%.⁴⁹ Program organizers realized that incentives changed with these fees. Using bKash for large sums became costly and unrealistic. In the current system that has been carefully crafted over BRAC's long history to operate

efficiently with cash, switching to bKash may be more expensive. The additional fees associated with transferring money from BRAC's merchant wallet to BRAC's bank account needed to be considered. Additionally, the impact of the cash-out fee needed careful consideration; who would ultimately pay the fee? Reviewing bKash fee structures and pilot project data helped SIL realize that cost would be a major obstacle in the coming three years.

bKash Service Charges – Person to Person (P2P)		
Action Type	End-user (P2P) Fees	Limitations
Open Account	Free	None
Cash In	Free	- BDT 25,000/day - 5 times/day - BDT 500,000/month - 20 times/month
Send Money	BDT 5 per transfer	- BDT 10,000/day - 20 times/day - BDT 25,000/month - 70 times/month
Cash out from agent	1.85% charge	- BDT 25,000/day - 3 times/day - BDT 150,000/month - 10 times/month
Cash out from ATM	2%	- Between BDT 2,000 – 20,000 - 3 times/day - BDT 150,000/month - 10 times/month
Merchant Payment	Free	Unlimited
Mobile Top Up	Free	- BDT 10,000/day - BDT 1,000/time - BDT 100,000/month - 50 times/day -1500 times/month

Figure 6: bKash Personal Wallet Services and Pricing Structure

bKash Service Charges – Corporate		
bKash Fees	Disbursement	Collection
Corporate fees	0.25% - 0.50%	1.5% (VAT inc.)

Figure 7: bKash Merchant Wallet Services and Pricing Structure

For BRAC's purposes, there are overarching issues with the bKash fee structure. In order for BRAC to capture any efficiencies in using bKash, it would have to make change in its own processes. Thus, BRAC was in a catch-22 at the start of the Innovation Fund: it was impossible to see the cost and efficiency benefits of mobile money unless big system changes were made. However, the major system changes were difficult to justify without solid evidence of efficiency benefits. The complications of this contradiction were

apparent from the start; without process changes even the selected pilot projects could run into cost issues when expanded:

- In the Health, Nutrition, and Population Program's project to digitize the distribution of incentive payments to a portion of community health workers, BRAC must send a payment via bKash to a health worker. The health worker then must cash out her payment for physical cash. bKash charges BRAC 0.25% for the disbursement of the incentive payment. The community health worker must pay a 1.85% fee to cash out her incentive.
- For a Microfinance loan installment, a client must send bKash from his/her wallet to BRAC's bKash wallet. Then BRAC must transfer the money from its bKash wallet to its bank account. The service is free for the client to send money to BRAC, but BRAC is charged a fee to transfer money to its bank account.

How to deal with the extra costs of mobile money could become a significant issue if BRAC decides to expand the use of mobile money in its programs. The fees for using bKash are static; questions that BRAC will need to answer are:

- Whether or not the use of mobile money is cost effective despite the extra charges levied on users through the bKash system, and
- Should the organization undertake massive process changes to accommodate the money mobile money fee structure?

One reason there was insufficient evidence to support the transition to mobile money was that there was no aggregated data regarding the cost of cash. Proponents of mobile money argue that cash carries unique costs of its own. Safety becomes an issue when transferring money from village organizations to branch offices and from branch offices to rural banks. In BRAC branch offices, accounts officers must travel to and from the bank multiple times: in the morning to withdraw cash and in the evening to deposit cash. There is the added insecurity of a lack of funds at rural bank branches – which then requires BRAC staff to return later in the day in the hope that money has arrived for the day. This is a huge time requirement. The time constraints and security risks of a cash-based system can be problematic for daily microfinance operations.

The SIL team found that quantifying the cost of cash was easier said than done. It was difficult to get an aggregate number of thefts, understand the burdens of reconciliation (i.e., checking that clients' passbooks reflected the same amount recorded in the software), and quantify the amount of time spent on counting and recording cash transactions. Despite the concrete example of mobile money usage, whether the benefits would outweigh the costs remained uncertain.

Furthermore, BRAC has ample systems designed to monitor financial operations, conduct audits, reconcile branch office passbooks with digital entries of physical cash transactions, and the software to create digital records. While resource-intensive, the current system has been fine-tuned to operate effectively. To change this structure drastically – as the shift to mobile money would require – raises significant costs and risks.

SIL's First Steps

SIL hoped that the Innovation Fund would spark new ideas for BRAC programming. They also hoped the organization would be able to gather concrete evidence of the benefits of mobile money in the BRAC system. The team used the first six months of the fund (September 2013 – February 2014) to learn as much as they could about mobile money and create excitement around the idea of mobile money at BRAC. They traveled to see existing mobile money systems in Kenya, Tanzania, and the Philippines. They invited experts in the field of digital financial services to participate in BRAC's *Frugal Innovation Forum: Scaling Digitally* conference in March 2014. This was a chance for SIL and leaders at BRAC to learn firsthand about how mobile money was creating new possibilities for financial inclusion and poverty reduction around the world.

Creating enthusiasm and buy-in within BRAC was crucial for SIL. Given the size of the SIL unit and the nature of its work, an important question from the beginning revolved around how to best leverage SIL's strengths to make a difference at BRAC. Most work required to incorporate mobile money into programs could not be done by SIL. They would need assistance from other programs and departments for the implementation, accounting, and monitoring of projects. Building excitement within BRAC was therefore an important step.

Drawing on the momentum created by the Frugal Innovation Forum, the SIL team launched an open call for ideas on March 6, 2014. They began to build enthusiasm for the initiative. And enthusiasm they needed – though the bKash microfinance project had been operating for almost a year, general BRAC interest concerning bKash was limited. But SIL believed that it could raise sufficient excitement around the idea of mobile money.

Initial Challenges of the Innovation Fund

“The lessons thus far are not about mobile money at all. They're about kicking something like this off and getting the ball rolling – bringing all the different players together and pushing things to make them happen.”⁵⁰

– Amanda Misiti, former SIL Team Member

A. Generating Excitement in BRAC

“The biggest thing was to kick off with a bang.”⁵¹

– Tasmia Rahman, former SIL Team Member

One of the innovative aspects of the Innovation Fund Challenge was its interactive nature. Maria knew that the only way to successfully introduce mobile money into BRAC at an organizational level was to create ownership throughout BRAC programs – not an easy task for a massive organization. To encourage ownership, the contest required direct participation from BRAC staff. The level of input from all members of the BRAC community was unusual at the structured organization. This internal buy-in was an

important aspect of SIL's work, since SIL is a small group within the broader BRAC network. The SIL team decided that the best way to continue was supporting individual programs. So they started by posing a simple question: "How can BRAC improve by introducing mobile money into its programs?" Those with ideas were instructed to submit an entry to an online contest – the Innovation Fund Challenge – between March 6 and April 10, 2014.

Initial submissions to the online contest illuminated an unexpected challenge: there was a limited perception of the potential uses of mobile money at BRAC. One common misconception was that mobile money only had relevance to microfinance but not to BRAC's other program areas. Cultivating an environment in which staff felt safe to volunteer ideas that veered away from the norm was critical to ensuring that new concepts emerged from the challenge. In addition, some staff were skeptical of mobile money's appropriateness to BRAC's client group. These staff criticized the cash-out fee. External submissions had another problem. Many people knew mobile money well. They had less of a sense of what BRAC could do and how mobile money would integrate into existing activities.

SIL wanted to make it easy for BRAC staff to learn about mobile money and its potential uses during the challenge. As part of the internal promotion of the Innovation Fund, SIL invited mobile money experts, such as CGAP's Senior Financial Sector Specialist Gregory Chen, to speak at internal Innovation Forums. Importantly, the SIL team emphasized the successes of mobile money in other countries. They stressed the message that if it was possible elsewhere, it was possible in Bangladesh. This was an experiment and a challenge for BRAC; the focus was on learning how the organization could use mobile money. Participation from all levels of organizational stakeholders, including the attendance of bKash's CEO Kamal Quadir, was critical for SIL's message to gain traction.

Asif Saleh, Senior Director of Strategy, Communications, and Empowerment at BRAC, oversees the operations of SIL. He is a staunch proponent of integrating mobile money into BRAC. Saleh identified the cultivation of internal champions as a critical move to alleviate internal resistance to the idea of a large system change. The demystification of mobile money and the public recognition from respected BRAC leaders intensified the growing excitement around the Innovation Fund Challenge. To prepare staff for the extraordinary nature of the challenge, SIL decided to do something no one would ever expect: a flash mob at an outdoor fair on BRAC Day. The team danced to Timati's "Not All About The Money." The catchy beat and dancing caught employees' attention.



Figure 8: SIL Flash Mob

These techniques are incredibly unusual at BRAC. No one had ever seen such activities used to promote a project. Curiosity grew, and SIL began to talk with other programs. Suspense grew as the deadline for submissions to the online contest approached. SIL fueled the fire by hanging posters in strategic spots around BRAC headquarters to count down the days left to submit ideas.

Their tactics worked. Almost 80 submissions were posted within the last week of the competition. Tasmia Rahman, the primary organizer of the Innovation Fund Challenge, attributes SIL's success to the unexpected level of competitiveness in their colleagues. The competition itself became motivation to participate. A voting option had been included to allow people to rank ideas by popularity. The rating system was to enable "other people to support ideas. We didn't realize that this would be the reason *why* people would submit ideas."⁵² In fact, word about the competition began to spread as employees emailed their colleagues in campaigns to gather the most votes. The intense promotion helped SIL spread the idea of mobile money within BRAC.

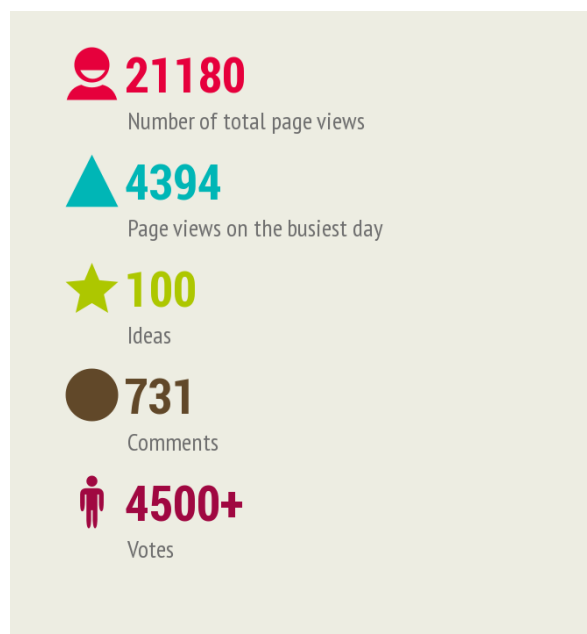


Figure 9: Innovation Challenge Website Statistics⁵³

SIL was surprised and pleased at the level of engagement in the contest. Other programs voiced worries about the use of a popularity ranking. The SIL team had to reassure concerned staff that the popularity votes were not a deciding factor in the final selection. By April 20th, 10 project ideas were shortlisted from a total of 100 submissions. The respective departments of the 10 project ideas were requested to submit a full proposal to SIL by May 15. A panel of four judges reviewed SIL’s shortlist of projects. Using a criteria guide created by SIL and the Bill & Melinda Gates Foundation, they chose the final 7 projects for implementation on June 1, 2014.

B. Connecting with bKash

Prior to the launch of the Innovation Fund Challenge, a major decision for SIL was determining which mobile money service provider would be the optimal partner for the Innovation Fund projects. Although BRAC and the Bill & Melinda Gates Foundation had previous relationships with bKash, SIL approached various providers agnostically. Talks with the diverse providers operating in Bangladesh commenced.

The ultimate decision to partner with bKash for the Innovation Fund was multifold. Firstly, since bKash is part of the BRAC family, there is a natural affiliation between SIL and bKash. BRAC Bank, which is owned by BRAC, is an equity holder of bKash. The relationship is furthered strengthened by BRAC presence on the Board of Directors of bKash: BRAC’s CFO and the Director of Microfinance, Shib Narayan Kairy and Shameran Abed, respectively, serve as board members.

Secondly, beyond organizational ties, bKash CEO Kamal Quadir notes that “there is a common ethos that [BRAC and bKash] practice, fundamentally. [bKash] is a company whose objective is making an intervention in the space of financial inclusivity, which is

very much in line with BRAC's overall objective and goal in alleviating poverty."⁵⁴ The complementing missions further cemented the partnership.

Given its long-term vision, SIL hoped to impress upon bKash that they could think about possibilities together. BRAC had the potential to be one of bKash's largest corporate clients, with its national network of staff and clients, but it would be a lot of work for both sides to develop the infrastructure for scale. SIL had already bought into the vision. Would bKash be willing to invest to support for BRAC's pilots?

To facilitate communication, bKash officials were invited to attend SIL's information sessions. They were also invited to review ideas from the Innovation Fund Challenge to help build ownership and strengthen the partnership. The terms of the partnership were formalized through a Memorandum of Understanding. After signing the MoU, bKash began to open merchant wallets for designated BRAC branch offices. These could be viewed from a web portal that BRAC created. The web portal became an essential building block in the creation of a long-term accounting system for digital payment streams.

C. Creating the Technology

“On the front end, it should be simple and intuitive so that people aren't confused.”⁵⁵
– Rashed Kabir, former SIL team member

There was one last pre-implementation task remaining for the SIL team: the creation of a system to capture bKash transactions and related data for the mobile money pilot projects. One of SIL's greatest hopes for the pilot projects was to generate reliable electronic records that would reduce the work hours required of accounts officers. In the existing system, information sharing was heavily dependent on SMS messages and handwritten ledgers. As a system, SMS messaging did not always provide reliable data. Network issues meant that branch offices occasionally missed SMS messages. An online system that tracked bKash transactions would prevent data losses from network issues and decrease the time needed to record data.

1 Monolog

Led No.	Number NO	Pranith NO	Amount		Savings No	Unidentified NO
			Green 7	Green 8		
2-663027	32-2011	2549529516			28000	
18111	26-2011	2549355788	2000		120	
825241	05-2011	2549372553	1000		80	
68268	04-2011	2549381531	1000		80	
2-213408	19-2011	2549509200	3200		200	
8401074	17-2011	2549411868	2500		200	
434535	20-2011	2549420778	1500		200	
324548	23-2011	2549442601	2000		-	
620943	03-2037	2549617365	1500	400	10400	
741884	08-2037	2549778467	2000	600	100	
55380	01-2023	255002871	2000	500	500	
50757	15-2023	2550069176	2000	-	120	
031286	28-2023	2550096381	2800	-	200	
			29500	1500	29500	

Figure 10: Handwritten Accounts Ledger

However, this required a system that BRAC did not have at the launch of the Innovation Fund; SIL lacked the advanced tools to capture incoming data in a useful manner. Taking advantage of the team's expertise, SIL decided to make its own set of software which would rely on real-time data. This would enable accounts officers in branch offices to get transaction information in a timely manner. Additionally, accounts managers at headquarters could see an overview of all branches easily in real-time. A major component of SIL's goal was to prepare infrastructure that could be easily implemented. This infrastructure would smooth the adoption of mobile money at BRAC. The ideal tool would collect pertinent data and be user-friendly for BRAC field staff. The solution that the team decided on was to make a strong back end API that would be able to support other software and could connect with mobile money data easily.

The task of creating the software by July 2014 fell to SIL's Information and Communication Technologies for Development (ICT4D) specialist, Rashed Kabir, and a few colleagues in the BRAC ICT department. Rashed utilized open source coding tools, such as Python, to develop BRAC's bKash transaction tracking site. This gave SIL a simple and cost-effective solution. The interface was designed to accommodate multiple projects. It included components that were chosen after a needs assessment of the existing Microfinance mobile money pilot was completed. Highlighted information included:

- Transaction information
- Amount of money
- A transaction ID number
- The sender's mobile phone number
- The sender's reference number

Along with a flexible search tool and graphic representation of the data, this information comprised the "must have" data for the future pilot projects.

Gulshan [875466] Welcome! Akram

ActionStatus	MembershipNo	VoCode	MemberName	SenderWallet	Amount	MerchantWallet	BkashTransId	RefCode	CounterCode	TransactionTime
N	45890	98560	AbuJ0	9870	0	21340	12340	20	10	8/13/2014 6:59
N	45891	98561	AbuJ1	9871	1200	21341	12341	21	11	8/13/2014 6:59
N	45892	98562	AbuJ2	9872	2400	21342	12342	22	12	8/13/2014 6:59
N	45894	98564	AbuJ4	9874	4800	21344	12344	24	14	8/13/2014 6:59
N	45895	98565	AbuJ5	9875	6000	21345	12345	25	15	8/13/2014 6:59
N	45896	98566	AbuJ6	9876	7200	21346	12346	26	16	8/13/2014 6:59
N	45897	98567	AbuJ7	9877	8400	21347	12347	27	17	8/13/2014 6:59
N	45898	98568	AbuJ8	9878	9600	21348	12348	28	18	8/13/2014 6:59
N	45899	98569	AbuJ9	9879	10800	21349	12349	29	19	8/13/2014 6:59

Figure 11: Branch accounts officer’s real-time mobile money data

To complement the software, another system was created simultaneously. This software was designed to connect branch managers to an online registry of transactions. This software eliminated the need for SMS messaging and resolved the challenge of network issues.

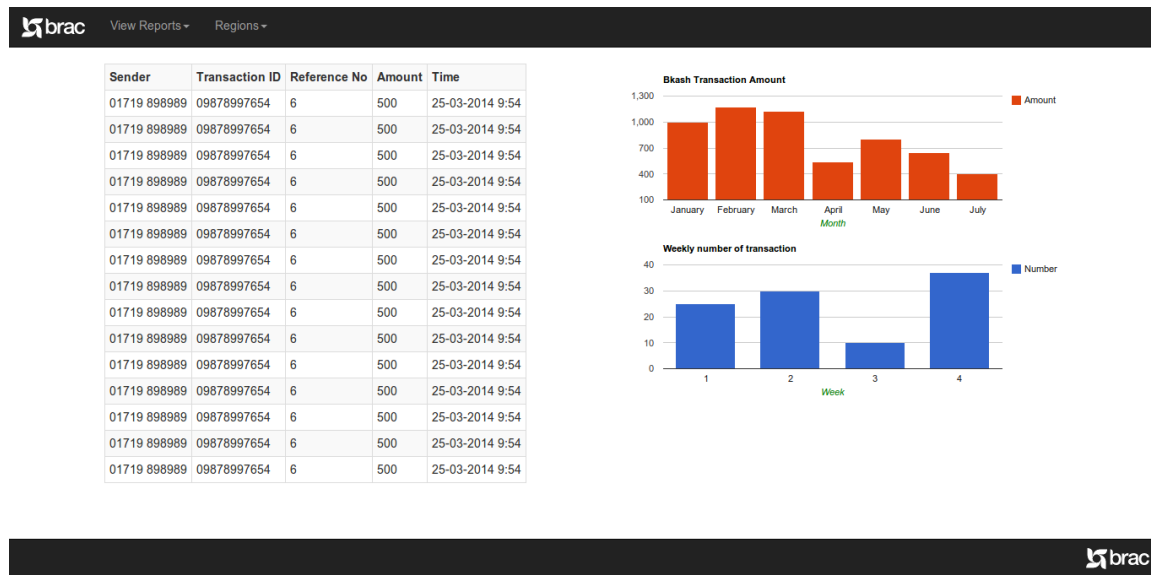


Figure 12: Branch manager’s real-time mobile money data

BRAC’s developers also create an online data management dashboard. The dashboard highlighted trends in receiving money and the number of transactions in real-time (see Table 11). The back end API was built along with these tools to enable other software to be connected with the core mobile money database. The software also produced a clean summary of branch data (see Table 12). These tools tapped into the inherent benefits of a digital system to connect BRAC headquarters with branch offices in an accurate and reliable manner.



Figure 13: Regional mobile money data in real-time

BRAC Microfinance
bKash Transaction Report

Branch: Gulshan [875466]
Date: 01 Aug, 2014 to 19 Aug, 2014

bKash Transaction Id	Transaction Time	Amount
First Slab		
Membership No: 45890 Name : Abul0	12340	0.00
Total 45890		0.00
Membership No: 45891 Name : Abul1	12341	1,200.00
Total 45891		1,200.00
Membership No: 45892 Name : Abul2	12342	2,400.00
Total 45892		2,400.00
Membership No: 45893 Name : Abul3	12343	3,600.00
Total 45893		3,600.00
Membership No: 45894 Name : Abul4	12344	4,800.00
Total 45894		4,800.00
Membership No: 45895 Name : Abul5	12345	0.00
Total 45895		0.00

Current Page No.: 1 Total Page No.: 1 Zoom Factor: 100%

Figure 14: Data summary from SIL's software

SIL hoped to incorporate all the necessary tools to manage any project with a mobile money aspect in this platform, regardless of department or project focus. With these tools in place, SIL was ready to test the incorporation of mobile money at BRAC. They would then discover if the pilot projects could utilize the digital nature of mobile money to increase efficiency.

Going Forward:

While the initial challenges had been handled and the seven pilot projects selected for funding, Maria knew that there were still many unanswered questions:

- *Would SIL be able to support seven very different projects at once? Could it build a community of practice so that project managers also helped each other?*
- *Would the seven pilot projects start building evidence proving the benefits of mobile money?*
- *Would mobile money prove to be more efficient and reliable than cash without compromising on program quality?*
- *Would the new software systems be up to the task?*
- *Would field staff be willing to learn and adjust to the new technologies?*
- *Currently there is no regulation regarding how organizations can use mobile money. What if the Central Bank creates this type of regulation and BRAC has already incorporated bKash throughout its operations?*

The process of establishing BRAC's mobile money system had taken a considerable amount of time. Already a year had passed since receiving the grant from the Bill & Melinda Gates Foundation! The time and effort needed to bring the organization to the implementation stage was greater than the SIL team had projected; the process took several additional months. However, this was an important lesson itself. Education and staff sensitization to the system change at all levels are extremely important for the adoption of mobile money systems. The time spent preparing BRAC for the bKash pilot projects laid the foundation for greater success. As the end of October 2014 approached, projects began to open bKash wallets for clients and staff. Transactions were only a few months away.

As the SIL team and pilot project managers prepared their staff and branch offices for the switch to mobile money in September and early October, unexpected challenges presented themselves. The level of technology in branch offices was not consistent. Many offices were operating with outdated software, which made using the new mobile money software impossible. Remote offices did not have electricity; for the accounting process, these offices relied on visits to other branches for electronic recording and communication with BRAC headquarters. The same remote regions reported both a lack of bKash agents and network issues. Lastly, project managers realized that the minimum amount required for cashing in to a bKash account, 50 taka, was a steep price for the poorest participants.

Many of the emerging issues required significant changes to processes and policies. Without changes at this level, many of the project leaders thought it was unlikely that mobile money could improve efficiency. Some of the issues on the clients' side were policies made by the Bangladesh Bank. There was little that BRAC or bKash could do about them.

Had SIL taken on too ambitious of a project? How could they provide the most effective support to project managers?

And the ultimate question remained: Would this initiative catalyze wider appreciation of mobile money's potential as a major tool in BRAC's anti-poverty mission?

Exhibits

Exhibit 1– bKash How-To's

bKash How-Tos

Open a bKash Account:

01. Go to any of your nearby bKash Agent along with -
 - a. Your mobile phone with Airtel, Banglalink, Grameenphone or Robi connection
 - b. A copy of your Photo ID (National ID/Passport/Driving License)
 - c. 2 copies of Passport size photographs
02. Fill out the Wallet Opening Form and put your thumb print and signature properly. Please make sure that you have taken your copy (customer copy) from Agent and preserve it for future reference.

Wallet Activation Process

Cash IN

To deposit money into your bKash Wallet

01. Go to any bKash Agent
02. Let the Agent know the amount you want to Cash In
03. Write down your bKash Wallet Number and the Cash In amount in the Agent Register
04. Pay the amount of money you want to Cash In
05. In exchange, the Agent will send balance to your bKash Wallet. Cash In done! You and the Agent will both get a confirmation message from bKash. Remember to sign the Agent Register before leaving the counter.

Cash Out

If you have sufficient balance in your bKash Wallet, you can withdraw cash anytime from any bKash Agent. To Cash Out from your bKash Wallet

01. Go to any bKash Agent
02. Let the Agent know the amount you want to Cash Out
03. Write down your bKash Wallet Number and the amount in the Agent Register
04. Dial *247# on your mobile for the bKash Mobile Menu
05. Choose "Cash Out"
06. Choose "From Agent"

Exhibit 2 – Innovation Fund Challenge timeline

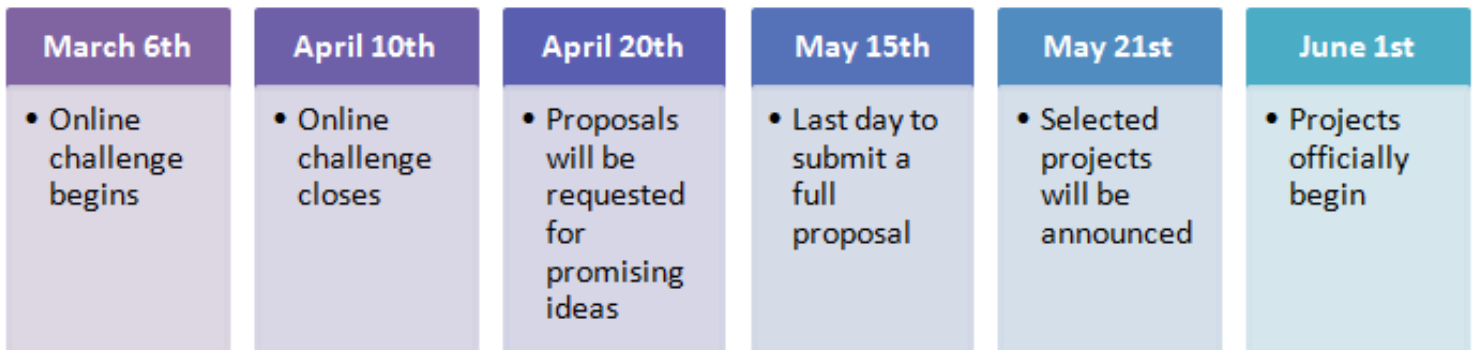


Exhibit 3 – Pilot project selection criteria

Basic project criteria

To be considered for the BRAC Innovation Fund for Mobile Money, a project **must:**

- Include bKash transactions or promote usage of bKash
- Include activities or products that are innovative, in the context of Bangladesh
 - Be feasible to implement on a pilot basis within one year
 - Have the ability to sustain beyond the terms of the project
- Be likely to influence and motivate additional utilization of mobile money by clients or BRAC

Preferential treatment will be given to proposals that:

- Last one year or less (programmes can re-apply next year for an extension or expansion, if initial results are good)
 - Modify an existing program rather than start a new pilot
 - Request less than \$100,000
 - Engage multiple BRAC programmes (or enterprises)

Exhibit 4 – Potential Benefits of Mobile Money as identified by SIL at Bogra

Potential benefits of mobile money

To clients

- Complete documentation of transactions
- Safer storage than cash (especially while traveling)
- Can be transferred momentarily across Bangladesh

Additional benefits to BRAC

- Reduction of manual data entry
- Real-time, accurate information
- Fewer security risks for staff and branches
- Less scope for misappropriation
- Potential reduction of transport costs
- New types of products and programs

¹ Hughes, Nick, and Susie Lonie. “M-PESA: Mobile Money for the “Unbanked.” Turning Cellphones into 24-Hour Tellers in Kenya.” *Innovations*. Winter & spring 2007.

Accessed 28 March 2015. http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2012/06/innovationsarticleonmpesa_0_d_14.pdf

² Lee, Jean. “A Roundup of Recent and Ongoing Mobile Money Research in Economics.” *Financial Access Initiative*. 7 November 2013. Accessed 28 March 2015.

<http://www.financialaccess.org/blog/2013/11/roundup-recent-and-ongoing-mobile-money-research-economics>

³ Penicaud, Claire and Arunjay Katakam. “State of the Industry 2013: Mobile Financial Services for the Unbanked.” *Mobile Money for the Unbanked*.

http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2014/02/SOTIR_2013.pdf

⁴ Chen, Gregory and Stephen Rasmussen. “bKash Bangladesh: A Fast Start for Mobile Financial Services.” *CGAP Brief*. 29 July 2014. <http://www.cgap.org/publications/bkash-bangladesh-fast-start-mobile-financial-services>

⁵ Chen, Greg. “bKash Bangladesh: What Explains its Fast Start?” *CGAP*. 4 August 2014. Accessed 23 May 2015. <http://www.cgap.org/blog/bkash-bangladesh-what-explains-its-fast-start>

⁶ Scharwatt, Claire, Arunjay Katakam, Jennifer Frydrych, Alix Murphy, and Nika Naghavi. “State of the Industry 2014: Mobile Financial Services for the Unbanked.” *Mobile Money for the Unbanked*.

http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/03/SOTIR_2014.pdf

⁷ “Integrated Development Programme.” Brac.net. Accessed 14 December 2014.

<http://idp.brac.net/>

⁸ “Overview.” Brac.net. Accessed 14 December 2014.

<http://microfinance.brac.net/overview>

⁹ “Institute of Educational Development.” Brac.net. Accessed 14 December 2014.

<http://www.bracu.ac.bd/academics/institutes-and-schools/ied>

¹⁰ “Adolescent Development Programme.” Brac.net. Accessed 14 December 2014.

<http://education.brac.net/adolescent-development-programme>

¹¹ “Overview.” Brac.net. Accessed 14 December 2014. <http://health.brac.net/overview>

¹² “BRAC Disaster, Environment and Climate Change Programme.” Brac.net. Accessed 14 December 2014. <http://decc.brac.net/>

¹³ “BRAC Disaster, Environment and Climate Change Programme.” Brac.net. Accessed 14 December 2014. <http://decc.brac.net/>

¹⁴ “What We Do – Financial Services For The Poor – Strategy Overview.” *Bill & Melinda gates Foundation*. Accessed 14 December 2014.

http://www.gatesfoundation.org/What-We-Do/Global-Development/Financial-Services-for-the-Poor#bodyregion_0_interiorarticle_0_strategysections_2_strategysubsections25836948343141af8f014b828442c5ca_1_lnkHeader

¹⁵ BRAC World. “Lynn Eisenhart asks for your mobile money ideas.” 31 March 2015. Accessed 10 May 2015. <https://www.youtube.com/watch?v=tHVtjDXZ1AA>

¹⁶ “2013 World Population Data Sheet.” *Population Reference Bureau*.

http://www.prb.org/pdf13/2013-WPDS-infographic_MED.pdf

-
- ¹⁷ “2013 World Population Data Sheet.” *Population Reference Bureau*. http://www.prb.org/pdf13/2013-WPDS-infographic_MED.pdf
- ¹⁸ “World Development Indicators.” *World Data Bank*. The World Bank. 2010. Accessed 10 May 2015. <http://databank.worldbank.org/data/views/reports/tableview.aspx>
- ¹⁹ “Bangladesh needs \$100b in 10 years for infrastructure: WB.” *The Daily Star*. April 3, 2014. <http://www.thedailystar.net/business/bangladesh-needs-100b-in-10-years-for-infrastructure-wb-18456>
- ²⁰ “Bangladesh GDP Growth Rate.” *Trading Economics*. <http://www.tradingeconomics.com/bangladesh/gdp-growth>
- ²¹ “Millennium Development Goals: Bangladesh Country Report 2013.” *General Economics Division (GED) Bangladesh Planning Commission*. August 2014. <http://www.bd.undp.org/content/dam/bangladesh/docs/Publications/Pub-2014/MDG%20Report%20Last.pdf>
- ²² Global Findex. *World Data Bank. The World Bank*. Accessed 31 July 2015. <http://databank.worldbank.org/data/reports.aspx?source=1228>
- ²³ Lucini, Barbara Arese and Tim Hatt. “Analysis Country Overview: Bangladesh.” *GSMA*. August 2014. Accessed 31 July 2015. <https://gsmaintelligence.com/research/?file=140820-bangladesh.pdf&download>
- ²⁴ Chen, Gregory and Stephen Rasmussen. “bKash Bangladesh: A Fast Start for Mobile Financial Services.” *CGAP Brief*. July 2014. <http://www.cgap.org/publications/bkash-bangladesh-fast-start-mobile-financial-services>
- ²⁵ Chen, Gregory and Stephen Rasmussen. “bKash Bangladesh: A Fast Start for Mobile Financial Services.” *CGAP Brief*. July 2014. <http://www.cgap.org/publications/bkash-bangladesh-fast-start-mobile-financial-services>
- ²⁶ Chen, Gregory and Stephen Rasmussen. “bKash Bangladesh: A Fast Start for Mobile Financial Services.” *CGAP Brief*. July 2014. <http://www.cgap.org/publications/bkash-bangladesh-fast-start-mobile-financial-services>
- ²⁷ Chen, Gregory and Stephen Rasmussen. “bKash Bangladesh: A Fast Start for Mobile Financial Services.” *CGAP Brief*. July 2014. <http://www.cgap.org/publications/bkash-bangladesh-fast-start-mobile-financial-services>
- ²⁸ Chen, Gregory and Stephen Rasmussen. “bKash Bangladesh: A Fast Start for Mobile Financial Services.” *CGAP Brief*. July 2014. <http://www.cgap.org/publications/bkash-bangladesh-fast-start-mobile-financial-services>
- ²⁹ Social Innovation Lab team. “Bogra Workshop Presentation.” Workshop, Bogra, Bangladesh, 22 – 23 June 2014.
- ³⁰ “Company Profile.” *bKash*. <http://www.bkash.com/about/company-profile>
- ³¹ Wills, Adam. “MDI Case Study – bKash.” *Mobile for Development Impact*. https://mobiledevelopmentintelligence.com/insight/MDI_Case_Study_-_bKash
- ³² Scharwatt, Claire, Arunjay Katakam, Jennifer Frydrych, Alix Murphy, and Nika Naghavi. “State of the Industry 2014: Mobile Financial Services for the Unbanked.” *Mobile Money for the Unbanked*. http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/03/SOTIR_2014.pdf
- ³³ Chen, Gregory and Stephen Rasmussen. “bKash Bangladesh: A Fast Start for Mobile Financial Services.” *CGAP Brief*. July 2014. <http://www.cgap.org/publications/bkash-bangladesh-fast-start-mobile-financial-services>

-
- ³⁴ Social Innovation Lab team. “Bogra Workshop Presentation.” Workshop, Bogra, Bangladesh, 22 – 23 June 2014.
- ³⁵ Nothias, Jean-Christophe. “The Top 100 NGOs 2013.” *The Global Journalist*. Page 38. Accessed 4 October 2014.
https://www.care.at/images/care_2013/downloads/top100ngos.pdf
- ³⁶ Collins, Daryl, Jonathan Morduch, Stuart Rutherford, and Orlanda Ruthven. *Portfolios of the Poor: How the World’s Poor Live on \$2 a Day*. Princeton, New Jersey: Princeton University Press, 2009.
- ³⁷ Collins, Daryl, Jonathan Morduch, Stuart Rutherford, and Orlanda Ruthven. *Portfolios of the Poor: How the World’s Poor Live on \$2 a Day*. Princeton, New Jersey: Princeton University Press, 2009.
- ³⁸ Collins, Daryl, Jonathan Morduch, Stuart Rutherford, and Orlanda Ruthven. *Portfolios of the Poor: How the World’s Poor Live on \$2 a Day*. Princeton, New Jersey: Princeton University Press, 2009.
- ³⁹ Mazer, Rafe. “Small balance Savings Accounts: Be Careful What We Wish For?” *CGAP Blog*. 1 June 2012. Accessed 23 December 2014. <http://www.cgap.org/blog/small-balance-savings-accounts-be-careful-what-we-wish>
- ⁴⁰ Cohen, Monique, with CGAP staff and Deena Burjorjee. “Donor Brief.” GCAP. No. 13. July 2003. Accessed 24 December 2014.
<http://www.cgap.org/sites/default/files/CGAP-Donor-Brief-The-Impact-of-Microfinance-Jul-2003.pdf>
- ⁴¹ “Overview.” Brac.net. Accessed 23 December 2014.
http://innovation.brac.net/index.php?option=com_content&view=article&id=151&Itemid=694
- ⁴² “Bangladesh Highway Data.” *The World Bank*. Accessed 14 December 2014.
<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/EXTSARREGTOPTRANSPORT/0,,contentMDK:20694180~pagePK:34004173~piPK:34003707~theSitePK:579598,00.html>
- ⁴³ “Social Innovation Lab.” *Brac.net*. Accessed 4 October 2014.
<http://www.brac.net/content/social-innovation-lab#.VC-uhimSwxE>
- ⁴⁴ “Overview.” Brac.net. Accessed 23 December 2014.
http://innovation.brac.net/index.php?option=com_content&view=article&id=151&Itemid=694
- ⁴⁵ Social Innovation Lab team. “Bogra Workshop Presentation.” Workshop, Bogra, Bangladesh, 22 – 23 June 2014.
- ⁴⁶ BRAC Microfinance Regional Manager & Program Officers. “Bogra Workshop Presentation.” Site Visit, Bogra, Bangladesh, 22 – 23 June 2014.
- ⁴⁷ Kretchun, Nat and Peter Goldstein. “Bangladesh Quicksights Report FII Tracker Survey Wave 1.” *Financial Inclusion Insights*. InterMedia. April 2014. Accessed 31 July 2015. <http://finclusion.org/wp-content/uploads/2014/04/FII-Bangladesh-Wave-One-Survey-QuickSights-Report.pdf>
- ⁴⁸ BRAC Microfinance Regional Manager & Program Officers. “Bogra Workshop Presentation.” Site Visit, Bogra, Bangladesh, 22 – 23 June 2014.
- ⁴⁹ Social Innovation Lab team. “Bogra Workshop Presentation.” Workshop, Bogra, Bangladesh, 22 – 23 June 2014.

⁵⁰ Meckler, Jessica. Interview with Amanda Misiti. Personal interview. Dhaka, August 2014.

⁵¹ Meckler, Jessica. Interview with Tasmia Rahman. Personal interview. Dhaka, July 2014.

⁵² Meckler, Jessica. Interview with Tasmia Rahman. Personal interview. Dhaka, July 2014.

⁵³ May, Maria. "Mobile Money at BRAC." Presentation, Dhaka, Bangladesh, 12 June 2014.

⁵⁴ Meckler, Jessica. Interview with Kamal Quadir. Personal Skype interview. Pune/Dhaka, January 2015.

⁵⁵ Meckler, Jessica. Interview with Rashed Kabir. Personal interview. Dhaka, August 2014.