Galvanizing Support: The Role of Government in Advancing Adoption of Mobile Financial Services

Prepared in collaboration with The Boston Consulting Group
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Executive Summary

Despite initial gains and promising new developments, mobile financial services (MFS) adoption has hit an impasse in many countries. Governments throughout the developing world have a vested interest in promoting its development, not only to advance financial inclusion and its broader social and economic advantages, but also to deliver efficiencies and cost savings worth billions of dollars. Governments are uniquely positioned to remove the roadblocks, galvanize private players and pave the way towards widespread adoption.

This paper describes the role that governments could play in the MFS development cycle by generating new efficiencies in the first phase and then once MFS gains sufficient scale, creating new capabilities that can be used by cross-industry players.

Governments are set to gain a lot from MFS adoption by using MFS for government-to-person (G2P) disbursements. We estimate that governments in emerging nations could realize economic benefits totaling more than US$ 100 billion by 2015.

This paper identifies the key steps and strategies governments can undertake to kick-start MFS – strategies that can help them reduce the costs, mitigate the risks and begin unleashing the many benefits promised by MFS.
Special Thanks

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The Mobile Financial Services Landscape

Mobile Financial Services (MFS) have generated considerable enthusiasm in the developing world, and for good reason. For the nearly 2.5 billion unbanked individuals worldwide (2 billion of whom have mobile phones), mobile technologies such as phones, electronic cards and other devices offer a way to access banking services that have historically been unavailable to them (see Figure 1).

MFS represents an opportunity for many nations to achieve the long-cherished goal of financial inclusion of poor citizens, and is perhaps best known by its simplest and most common form today – payments made via mobile telephone, or m-payments.

But MFS encompasses many more services, including mobile-assisted banking (for transactions such as deposits and withdrawals), bill payments, savings and interest-bearing account services, loans and insurance. All are conducted without the need for traditional bank branches. Instead, such services depend on a wireless communications platform – rapidly becoming available to most people – and a network of retail agents who act as a liaison between consumer and provider, performing basic financial services.

It is widely recognized that MFS has the potential to deliver far-reaching socioeconomic benefits, and that is why it has become an important priority for most developing nations. The B20 financial regulation task force has also been very supportive of increasing penetration of MFS.
An Idea Whose Time Has Come

As developing nations grapple with their own economic challenges, they are looking for strategies that can fuel economic empowerment and development from within. Four factors have converged to position MFS as one such strategy.

1. The great disparity between mobile phone penetration levels and financial inclusion.
   
   According to the World Economic Forum’s Mobile Financial Services Development Report, although mobile phones enjoy a high penetration rate in emerging economies, the percentage of people who have access to basic financial services remains woefully low (see Figure 2). Mobile phones represent a way to bridge this gap. In fact, in certain countries, the bridging has already begun. MFS, notably M-Pesa, is used by approximately 40% of the adult population in Kenya, whereas only 10% have access to standard financial services. In countries such as Uganda and Nigeria, in which nearly everyone has mobile phone access but less than 20% of people are banked, MFS’s potential for advancing financial inclusion is quite large.

2. Many technological breakthroughs.

   Recent breakthroughs in mobile phone technology bring the promise of financial inclusion closer to fruition. Mobile and smart phones continue to grow cheaper and more robust. They are more widely available, and network coverage today is nearly ubiquitous. Mobile phones, along with smartcards and related chip-enabled devices, are an easy transaction channel. When coupled with authentication mechanisms such as unique identifiers, mobile-enabled transactions are also a safer, more direct means of transacting. For all stakeholders, it is important to take action when excitement and expectations are on the rise or at their peak, rather than after interest and receptivity wane and expectations must be realigned.

3. New employment opportunities.

   Increased access to finance facilitates entrepreneurship, new business creation, and new jobs. In rural areas, lack of access to basic financial services inhibits employment and makes it difficult for unbanked people to conduct business. A World Bank study finds a 1% increase in financial inclusion corresponds to a 0.51% increase in business creation, and a 15% inclusion increase leads to employment growth of 1%.

4. Beneficial to all stakeholders.

   The benefits of MFS are not limited only to unbanked individuals. All stakeholders in the ecosystem are poised to benefit in the long run by adopting MFS. Banks can build new markets and acquire entire swaths of new customers, particularly millions of rural individuals who are currently unbanked. Mobile network operators (MNOs) have a new basis on which to boost customer loyalty and reduce churn. Handset manufacturers can grow sales, with models especially enabled for mobile transaction functions. However, it will take time for these benefits to be realized. The unbanked segment has been traditionally unprofitable; hence, servicing these consumers would take an in-depth understanding of their needs in order to tailor suitable offerings.
Figure 2: Wide gap between mobile penetration and degree of financial access

The Mobile Financial Services Landscape

Penetration rates, %

Persistent Obstacles: The Promise on Hold

Despite the promise of MFS and the considerable investments made so far by the private sector, examples of MFS success are rare. Many challenges still must be overcome to allow MFS to become a scalable and profitable business across geographies. Let us review the major challenges.

Different stages of evolution

The dynamics of market development vary widely across countries (see Figure 3). The World Economic Forum’s Mobile Financial Services Development Report notes that overall adoption of MFS services around the world remains limited. As Figure 3 shows, only four countries have achieved high adoption rates (defined as 10% or more of the adult population). Even in these countries, growth seems to stem from the lack of financial services options rather than from a preference for MFS and its functional advantages. Solutions may vary widely depending on each country’s unique political and market structures, thus making MFS adoption complex.

One size does not fit all

Different political and regulatory structures, along with differing economic and market realities, have led to the emergence of a continuum of business models (see Figure 4). Models in such countries as India and Brazil are bank-led, whereas elsewhere, as in Kenya, they are telecom-led. The extent of market competition is also an important factor in determining how business models evolve in a given geography. No single business model can be applied effectively across all geographies, which makes the dynamics of MFS development extremely complex.

Lack of a champion

MFS involves many direct players, stakeholders and preconditions. A single entity that can take leadership and provide an end-to-end delivery mechanism may well be a prerequisite to advancing MFS. In Kenya, the main MFS success story thus far has been Safaricom, the nation’s dominant telecom (aided by the UK’s Department for International Development and a favourable government environment), which rolled out the products, received government approval to launch it, implemented a wide-scale distribution network, and rapidly rolled out service.

Figure 3: Countries at varying degrees of evolution in MFS development cycle

In the absence of such a dominant catalyst, MFS development can be impeded by two key factors:

- **Lack of coordination.** A well-functioning MFS ecosystem requires a complex and delicate balance, along with coordinated action, among a number of stakeholders. Yet players often have differing vested interests that undermine the consensus. Vested interests might prevent a faster, better, cheaper technology from beating an outdated technology, which could lead to market stagnation or failure. Leaving MFS development to market forces not only creates delays, but also creates gaps and adds risks that could cause setbacks to MFS development.

- **Lack of a supporting distribution infrastructure.** A well-developed agent network is a baseline requirement for achieving scale for branchless banking. This is not surprising, given the physical constraints to accessing financial services and the critical need to engender trust in these services. In addition to the low-cost and widely distributed networks of local agents that are vital to the sustainable delivery of financial services, other intangibles such as trust in a provider’s brand, the personal relationship an individual holds with his or her local agent, and the endorsement from relevant peers all play a role in adoption. As much as the mobile finance opportunity is enabled through ubiquitous technology, it is supported and sustained by end users, trusted local agents and a consistent user experience.

### Inadequate understanding of consumer needs

To serve unbanked consumers better, stakeholders need to have a fundamental understanding of consumers’ behaviours and spending patterns. Behavioural data informs governments for policy-making and economic development, as well as private-sector decisions for developing targeted products and services. Demand-based, accurate and aggregated datasets serve as the foundation for these requirements. Data can be collected from software applications and analysed without compromising the privacy of individuals.

Currently, however, such information is often inadequate or nonexistent in many developing nations. Industry providers in particular need data such as default rates, the quality and nature of infrastructure, and consumer demographics to develop viable business models.
The needs, benefits and requirements for MFS development have been widely discussed for years, yet despite its ample promise, MFS has not taken off. Are the practical impediments too great to surmount? Are the incentives for the private sector too elusive? Is the payoff too distant? Or is the problem more a matter of needing leadership to serve as a catalyst that will tame the complex dynamics?

From these questions, others follow:

− In general, does a developing nation’s MFS ecosystem need a big push from any one particular stakeholder in order to accelerate adoption?

− Is there an order in which certain fundamental factors (regulatory, institutional, market) must be addressed or resolved to lay the foundation that will spur development of the larger ecosystem?

− Which stakeholder has the ability to affect the greatest number of these factors? In what ways?

− For whom are the socioeconomic stakes of greatest importance?

Developing a sustainable MFS market requires the active participation, commitment and cooperation from all actors, private and public alike. A quick analysis of the seven-pillar framework laid out in the Mobile Financial Services Development Report indicates that government is well positioned to affect most pillars (see sidebar, “The First Step in Analysing the State of MFS Markets”). Most developing-nation governments do want to maximize the social and economic benefits of MFS and expand financial inclusion. Governments also have a key role in overcoming some of the obstacles such as market failure and restrictive policies. In other words, government is uniquely positioned to act as a catalyst to create a robust MFS ecosystem.

Yet most governments have tended to restrict their involvement in MFS. For some, inaction stems simply from lack of focus; political leaders have not made it a priority. Other governments regard MFS as a private-sector endeavour and do not see its potential for achieving many of the goals they already pursue – fiscal efficiency, economic development, financial inclusion – let alone the benefits MFS can deliver to their own operations. Still others have already moved to electronic payment systems, but do not yet recognize the significant additional advantages offered by mobile devices.

Because MFS encompasses a broad swath of industries and because of the siloed nature of government agencies, very few governments have taken a leadership role in tackling, for example, the collective considerations of telecom and financial services regulation. While there have been some attempts (such as the Mobile Payment Forum of India) to bridge this gap between telecom and financial services, the ecosystem had not achieved a balance. Invariably, one domain has tried to block the entry of the other. Such competition between two key industries constrains any effort to build a sustainable MFS ecosystem.

Clearly, government has the potential to play a bigger role in MFS development cycle. But what exactly should this role be? How can governments address the needs of all the stakeholders to build a sustainable ecosystem?

The next sections of this paper explore the role that government can play in advancing MFS adoption across two phases: driving new efficiencies and building new capabilities.

Notably, we estimate that by leveraging MFS for government-to-person (G2P) payments, governments of developing nations can realize economic benefits of approximately US$100 billion per annum by 2015. These benefits are primarily comprised of leakages that will be plugged while disbursing government payments. The paper highlights key steps and strategies governments can undertake to kick-start MFS – strategies that can help them reduce the costs, mitigate the risks and begin unleashing the many benefits promised by MFS.
The Roles of Government through the MFS Development Cycle

The MFS development cycle involves two phases: driving new efficiencies and building new capabilities (see Figure 5). The first phase consists of a “formative stage” of creating and building an MFS ecosystem, and then a “scaling up stage” as MFS finds widespread usage.

The second phase refers to the transformative potential of MFS through activities that fulfil the broader economic potential of MFS. This would entail creating strategic assets such as extensive payments networks, business-to-business (B2B) trading mechanisms and inventory tracking systems as a by-product of the scale gained during the first phase. These assets can be used to not only subsidize further expansion of the MFS marketplace, but also to stimulate other industries such as health, retail, and agriculture.

One way to create new capabilities is to harness the power of big data – voluminous unstructured and semi-structured data created by digital transaction, which could be used to discover new insights and behaviours of unbanked and to aid in decision-making.

Government has a critical role to play across the two phases of MFS development cycle, and we will examine that role in more detail.
Driving New Efficiencies

One aspect of government’s role is the ability to improve efficiencies in the system. During the formative stage, government can create a framework to facilitate private-sector investment in the necessary infrastructure, and to catalyse broad initiatives that address technical, regulatory, market and consumer considerations.

In parallel, government can also define risks, establish broad goals, craft enabling regulation, provide checks and balances, and otherwise set clear guidelines that influence private-sector and citizen behaviour. During the scaling-up stage, government can adopt MFS for its own use in issuing and receiving a wide variety of payments, a practice that can generate significant financial and strategic benefits for government and citizens alike.

Figure 5: The two phases in the MFS development cycle and government’s role in each

The Formative Stage: Government as an Enabler

Governments have the ability to trigger private-sector interest in investing in initiatives that range from infrastructure development to defining and setting standards, ensuring interoperability and developing awareness programmes. Governments also play a key role by issuing regulations and formulating policies and standards that oversee private-sector behaviour.

Together, these facets provide the checks and balances necessary to foster a well-functioning MFS ecosystem. It is a balancing act. For example, regulators of the telecom and financial industries must consider how best to amend and establish regulation that provides sufficient flexibility to foster MFS development without exploiting consumers or compromising the protections they need. At the same time, MFS regulation must achieve fairness without hampering the competitive advantage of either the telecom or the financial services sector.

The role as enabler takes many forms:

Implementing a balanced regulatory framework

Government faces a dual challenge. It must reconcile the need for flexibility – allowing room for innovation by private players – with the need to protect stakeholders against the risks that can arise in a decentralized, complex and rapidly changing environment. But it must also oversee the convergence of two once-distinct sectors (financial services and telecom) with their own existing regulatory frameworks, taking into account new operating realities, risks, and requirements. For example, financial regulators have an interest in the activities of private players that extends beyond their traditional purview. Many have already created mobile wallets for nonbank entities. But financial regulators must address the larger question implicit in a fully developed MFS system: What other banking services should nonbanks be allowed to offer besides mobile payments? How can you ensure fairness in oversight between banks and nonbanks?
Government can require telecom providers to offer universal service and coverage as a way to spur MFS market growth. It can establish higher quality standards to promote consumer adoption. After all, increased service reliability boosts consumer trust.

When it comes to technology infrastructure, government could help promote interoperability among private players, especially across the network of banks, financial network participants (such as Visa and MasterCard), mobile network operators (MNOs), agents, telecom providers and handset manufacturers.

Monitoring progress through feedback mechanisms such as pilot programmes

Government can sponsor or promote feedback mechanisms to ensure an initiative’s progress soundly. Pilot programmes are among the most useful means of gaining feedback, enabling problems and mistakes to be addressed early and without derailing efforts. A number of governments have established pilot programmes that have accelerated MFS development and use (see sidebar, “Test, Learn and Accelerate: The Value of Pilot Programmes”).

Creating safe forms of individual identification and a secure framework for personal data

Mobile transacting requires a secure form of personal identification and a technology system that protects each individual’s identity and personal data. All individuals thus need a unique, secure form of identification that validates them as the right recipient or payer while also protecting their personal data. In creating an authentic and unique customer identification, government must also ensure that the validation ecosystem is safe and secure. These unique ID initiatives could either be led by governments alone or in collaboration with the corporates so that usage spreads across all sectors. Several authentication methods can be used, from issuing a unique number or mobile-based PIN to biometric forms of identification, such as electronic fingerprints and iris scans.

A fundamental requirement of any MFS system is that it protects end-users’ personal information. While aggregate consumer data is important for advancing MFS development—and for economic development in general—personal data must be protected through appropriate policy frameworks. Governments need to develop a security framework that provides data integrity, ensures internal content security and control, and provides for data encryption (over the network, in the database and on every user’s card). The security framework should also contain processes for responding to identity fraud, a legal framework for privacy, accountability and deterrence mechanisms, response and investigation mechanisms for coping with data breaches, and so on.

One government-led initiative in India is creating a unique identification number (called Aadhaar) and/or biometric identification for every citizen or individual user. The purpose is to issue a unique identification number (UID) to all Indian residents that is robust enough to eliminate duplicate and fake identities, and can be verified and authenticated in an easy, cost-effective way. This effort – probably the largest such undertaking in the world considering the size of India’s population – will encompass processes for enrolment, authentication and de-duplication.

Government can provide tax breaks and other incentives to private players, and it can forge public-private partnerships to spur MFS growth. Beyond stimulating the build-out of infrastructure, incentives can also encourage the design of products appropriate for the general population or for specific segments – products that might otherwise be developed because of their low initial profitability. For example, to create profitable business models for network agents, government could pay the last-mile agent on the basis on every completed G2P transaction.

Launching information campaigns to heighten awareness

The successful wide-scale adoption of MFS depends in part on end-user awareness of products and programmes, how they work and what benefits they offer. A public campaign about the use of mobile phones for financial services, especially in rural areas, can go a long way toward encouraging adoption. It can readily promote the advantages of MFS and lend credibility to such services. Strong awareness campaigns can also address individuals’ concerns about security, privacy and consumer protection, which is especially important for populations with limited or no experience with the banking system. Information campaigns launched in rural areas in the Philippines and Colombia as part of a USIA campaign have proven to be effective so far.

Promoting the use of MFS for international remittances

Governments can choose to facilitate a transnational mobile payment settlement mechanism to support international remittances. In countries such as the Philippines and India, international remittances constitute roughly 4% to 5% of GDP. A suitable mechanism for executing international remittances could help fuel MFS adoption locally. Other countries such as Brazil, Haiti and Uganda would stand to benefit considerably as the cost of receiving international remittances in these countries is high (see Figure 6). Further, international remittances through mobile technologies would reap cost, time and safety efficiencies by going directly to the end user and bypassing middlemen. As noted in The Mobile Financial Services Development Report, high levels of international remittances have helped to accelerate MFS adoption in Kenya, the Philippines and other emerging economies.

The Scaling-up Stage: Government Reaping Benefits by Using MFS

Leaders reluctant about government assuming a proactive role ought to consider the significant benefits MFS offers to the government. These direct benefits further translate into indirect benefits that serve all stakeholders, such as the wider and safer distribution of government welfare schemes, increased transparency and reduced corruption and fraud. Indeed, government’s own vast payment interaction with citizens represents a powerful catalyst to MFS development.

G2P payments come primarily in the form of subsidies (cash or payments in kind) or government salaries (for banked and unbanked employees). Throughout developing countries, total G2P payments constitute roughly 4% to 5% of GDP. A suitable mechanism for facilitating a transnational mobile payment settlement mechanism to support international remittances. In countries such as the Philippines and India, international remittances constitute roughly 4% to 5% of GDP. A suitable mechanism for executing international remittances could help fuel MFS adoption locally. Other countries such as Brazil, Haiti and Uganda would stand to benefit considerably as the cost of receiving international remittances in these countries is high (see Figure 6). Further, international remittances through mobile technologies would reap cost, time and safety efficiencies by going directly to the end user and bypassing middlemen. As noted in The Mobile Financial Services Development Report, high levels of international remittances have helped to accelerate MFS adoption in Kenya, the Philippines and other emerging economies.

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These payments can be converted from paper-based to electronic transactions through mobile devices, in three categories:

- **Cash support**, primarily welfare programmes in which cash is directly distributed to recipients. One example is Colombia’s Familias en Accion, the country’s main conditional cash transfer programme, which pays out roughly US$ 800 million annually to 1.5 million recipients.

- **Non-cash support**, including benefits paid in kind (food, fertilizers), price subsidies on products and fee waivers for essential services such as healthcare or education. India’s Public Distribution System, for example, sells for approximately US$ 6 billion in subsidized basic foodstuffs through nearly 500,000 fair-price shops.
Salary to government employees, including salaries, pensions, small savings scheme disbursements and provident funds. According to CGAP, roughly 10% of total salary payments to government employees go to those lacking a bank account.

In developing countries, government payments frequently fall into the wrong hands. In addition, high administrative or overhead expenses can erode already scarce resources, reducing the amount remaining for benefit payments. MFS can help plug these efficiency gaps, in particular, by reducing or eliminating three types of inefficiency:

- **Leakage.** Most G2P schemes suffer from significant leakages once they are implemented. With a large network of intermediaries required to deliver these services to a widely dispersed, poor and undereducated population, a significant proportion of the funds are diverted along the way. Subsidies leak through several avenues:
  - **Ghost beneficiaries.** Scammers create non-existent beneficiaries in whose name they receive the benefit.
  - **Shadow ownership.** This refers to wrongfuly possessing a benefit entitled to someone else.
  - **Misidentification.** Erroneous identification of a person can occur because he or she lacks adequate verification while registering.
  - **Misreporting.** In some cases, the lack of a verification mechanism permits the benefit amount to be inflated by intermediaries.
  - **Underpayment.** In many cases, when a direct payment has to be made to a beneficiary, the full amount is not transferred. For example, only part of the cash payment required to be given to a pregnant woman under the government healthcare scheme, might be given by the health centre, which then illegally retains the rest.

There is no conclusive study on the extent of leakage, but estimates suggest that leakage affects 5-25% of total benefits routed and accounts for 75% of total losses.

In Argentina, the share of participants who admit to paying bribes to local officials in order to access their benefits fell from 3.6% to 0.3% after the Ministry of Social Development moved to electronic payment cards. In Afghanistan, at least 10% of police officers’ salary payments were going to ghost officers, with middlemen pocketing the difference. Government discovered the practice only after implementing MFS for salary disbursements.
− **High transaction costs.** According to a study by BCG, the average cost of providing subsidies through a paper-based transaction or online business correspondent is 10 to 100 times higher than doing so via Internet or mobile transaction (see Figure 8). Paper-based transactions also introduce the possibility of human error in data entry.

− **High administrative costs.** Mobile-assisted and other electronic disbursements reduce administrative and overhead costs, including audit and reconciliation costs. These savings could amount to 5% of total existing administrative costs.

Taken together, preliminary estimates indicate that the combined savings for governments of developing nations could be from US$ 3 billion to US$ 50 billion per annum by 2015, depending on the level of G2P payments routed through mobile devices and the percent of leakage. Please refer to Figure 9 to find different scenarios of direct savings potential. Beyond the tremendous direct and indirect savings to government budgets (and taxpayers’ wallets), a mobile-enabled electronic G2P payment network could also, through a single initiative, connect a large segment of the unbanked population to the financial grid.

Figure 7: Total G2P payments to unbanked residents in developing countries are estimated at more than US$ 1 trillion

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<th>Source: CGAP, World Bank, BCG Analysis</th>
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<tr>
<td>Key Assumptions</td>
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<tr>
<td>Cash transfers Non-cash (remaining) Total subsidies Government salaries (unbanked) Total G2P payments</td>
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<tr>
<td>2009</td>
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<td>2015</td>
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**Figure 8. Cost–quality curve for different channels of banking services; mobile phones can dramatically lower the unit transaction costs**

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<th>Cost (USD)</th>
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<tr>
<td>High</td>
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<tr>
<td>Branch</td>
</tr>
<tr>
<td>Online business-correspondent model</td>
</tr>
<tr>
<td>Low</td>
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<tr>
<td>ATM</td>
</tr>
<tr>
<td>Internet/mobile phone</td>
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<tr>
<td>Call center</td>
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Sources: BCG case experience and analysis.
The Strategic Benefits for Governments

In addition to the large potential savings, governments can achieve a number of strategic goals through MFS. They can:

*Increase the utilization of services.* Many citizens are unaware of the subsidies and government assistance programmes for which they qualify. MFS offers a new way to learn about such benefits. Individuals can receive messages from government agencies informing them of various programmes for which they may be eligible.

*Increase the effectiveness of subsidies.* Instead of issuing payments in kind, governments can issue electronic payments that enable recipients to purchase items, such as fertilizer, at the optimal time. M-vouchers also allow redemption across a specific basket of goods, giving recipients more power and flexibility in making purchasing decisions.

Reduce corruption and fraud. Mobile payments go direct to the individual’s account, eliminating the need for intermediaries and others who can gain access to skim or steal. Individuals receive everything that is owed them.

**Figure 9. Potential savings through mobile G2P payments (from US$ 4 billion to US$ 46 billion)**

The Strategic Benefits for Recipients

Citizens and other recipients of government payments stand to gain when government adopts MFS as a payment mechanism. The benefits include:

*Greater transparency, faster access to account information.*

Many no-frills accounts that are electronically enabled contain money that beneficiaries may not be aware of. Because the m-wallet or mobile-assisted bank account is linked to a mobile phone, the recipient or account holder would always know that money is available, and how much. Individuals also have the assurance that money is being tracked electronically by both parties in the transaction. Mobile provides a record and the ability to archive information so that money can no longer disappear and amounts cannot be disputed.

*Lower cost of obtaining money.*

Physical payments require rural recipients to travel, often long distances, and endure long waits to receive their money. In addition, recipients often incur hefty fees for transactions. A mobile payment system reduces or eliminates the high costs of such transactions, boosting the savings advantages of MFS to low-income people.
Ease of usage

If the last-mile person is plugged into the financial grid, he or she can use mobile to initiate peer-to-peer transfers. Once the MFS ecosystem attains critical mass, network effects would start to kick in and the need to cash out would steadily decrease.

Safety

With a mobile payment system, people no longer have to carry cash on their person or store it under the mattress. The risk of theft and robbery is sharply reduced—a risk that, for poor people, can have devastating consequences. Their money is safely stored and accessible to them anytime.

Aggregating all the benefits, the shift to mobile G2P payments represents a huge opportunity. While the strategic benefits cannot be accurately quantified, even if we were to assume that they equal the economic benefits, they present a potential benefit of ~US$ 100 billion for the governments of developing nations by 2015 (in the most optimistic case (see Figure 9 and 10).

Let us discuss some of the opportunities that may be characteristic of Phase II of MFS:

India’s Holistic Approach to Create Efficiencies: Cautious, Yet Steady

In India, mobile financial services – in particular, government-to-person (G2P) payment schemes – are seen as the key mechanism for advancing the nation’s goal of financial inclusion. With good reason: India ranks second in the world in mobile phone use, yet more than 70% of its population is rural and roughly 50% of households are financially excluded. Several recent MFS developments illustrate the government’s multiple roles in driving new efficiencies – roles that often overlap and augment each other.

The Unique Identification Authority of India (UIDAI), charged with developing a unique ID number for every individual, is perhaps India’s most ambitious and important enabling effort. The Aadhaar number, as it is called, will enable the government to eliminate duplication under various schemes, which is expected to save substantial money for the government exchequer. It will also provide governments with accurate data on residents, enable direct benefit programmes and allow government departments to coordinate investments and share information. Another example of the government’s role as enabler is one of the key mandates of the UIDAI: offering consumer protection against identity risk.

The National Payments Corporation of India (NPCI), also initiated by the government, is a key player in infrastructure development. This nonprofit forum, a partnership of the Reserve Bank of India and 10 major banks, is dedicated to integrating multiple disparate payment systems (e.g. ATMs, point-of-sale machines) into a standardized nationwide system for retail payments and one that will be affordable to the average person. The Interbank Mobile Payments Service and Aadhaar-Enabled Payment System platforms, both outgrowths of the NPCI, will enable integration of the payment systems of various G2P programmes, with the mobile phone as the primary device for payment.

Mobile providers Airtel and Nokia have launched mobile wallets (with Vodafone soon to follow) and have also established partnerships with banks. To improve efficiencies and promote the development of a fair market, the Indian government is monitoring private players’ activities closely, refraining from issuing banking licenses to mobile providers and limiting their role for the time being to that of “businesses correspondents” (mobile phone providers cannot, for example, issue wallets with a cash-withdrawal capability, although they are allowed to offer semi-closed wallets, which enable deposits only). The infrastructure developments described here also illustrate the progress that the Indian government is making in the scaling up stage. By 2015, an estimated US$ 40 billion of G2P payments will be made using mobile devices. Welfare schemes, which represent the lion’s share of the three categories of government payment programmes (the other two being direct government salaries and small savings schemes), constituted US$ 65 billion in the 2008-2009 fiscal year. Welfare payments include direct cash, subsidies and services.

Given the scale of these efforts and the complex dynamics in India – between the central and state governments, between banks and network operators, and between the private and public sectors – MFS developments are not without their snags. Most recently, for example, parties within the executive branch and legislature raised questions about the UIDAI’s data security and costs. And numerous regulatory issues must be resolved before the government allows telecoms to offer anything beyond partial financial services. Still, given the stakes, it is hard to imagine that the setbacks along India’s road to MFS will be anything but temporary.

Building New Capabilities

Once the basic foundation of MFS infrastructure has been set up and a threshold number of consumers enrolled has been reached, it will be very difficult to predict how wide and diverse MFS usage might be. We believe the next phase in the development cycle will involve building new capabilities, which would refer to the transformative potential of MFS – that is, the developments and activities that leverage MFS’ broader economic potential.

We believe that MFS could facilitate the development of next-generation applications to enhance productivity of operations and reduce organizations’ transaction costs. MFS could improve both the speed at which and the ease with which these applications are put in place.

A few specifics:

MFS can fundamentally improve payments across the supply chain infrastructure, especially for small and medium-sized companies with fragmented sourcing and distribution chains. It could build extensive payments networks, inventory-tracking systems, etc., because of the scale advantages gained in the first phase.

So-called Big Data – essentially the tremendous amount of “digital exhaust data” created as a by-product of digital interactions among consumers and among businesses, much of it through mobile phones – is expected to become a huge strategic asset (see box). It can be used to help analyse and interpret consumer behaviour and patterns of behaviour and can help drive development of many more customized products and services.

Once MFS has reached higher levels of maturity, it could be used to stimulate other cross-industry sectors such as agriculture, health, education and retail. Along with an identity platform, MFS could be used as a platform for capturing information and enabling payments.

Big Data: A Big Breakthrough for MFS?

Developments in Big Data might be the answer to many of the problems that MFS development faces today. The vast amounts of data generated by digital interactions – from online and mobile transactions to social media traffic and GPS coordinates, much of it linked to individuals – can provide valuable insights into consumers’ financial behaviour and patterns. This data can be synthesized to better understand the needs and wishes of unbanked as well as banked consumers, thus helping providers to develop appropriately targeted products and services.

In addition, aggregate data from digital interactions can also be monetized and therefore can be immensely valuable to many different MFS players. For providers in general, Big Data could be an added revenue source, enabling them to keep fees affordable and competitive. Banks, for instance, could manage risk more effectively by analysing user spending on mobile phones. Network providers could better understand users and thus tailor product design more appropriately. Individuals could receive information that helps them access social services as well as receive customized products and offers. Governments could use the data to improve participation in existing programmes as well as to develop new programmes that address emerging needs. Perhaps Big Data’s greatest boon is as an asset that government can leverage to help amortize the cost of MFS infrastructure initiatives or other significant expenditures.

Such uses for Big Data challenge the notion of charging cost of delivery to the end user. Big Data can enable private enterprise to subsidize the costs of developing and operating large-scale, infrastructure-intensive services and offer low-cost products to consumers. Internet giants like Facebook and Google are prime examples of companies that do not charge end users the actual cost of delivering certain basic services (such as e-mail), while benefiting, along with others in the Internet ecosystem, from secondary revenue sources.

That said, Big Data must be used with great caution. Data must be used in aggregate form only, and individuals’ personal identity and data must be safeguarded. Data access has to be strictly controlled, with all the necessary security mechanisms in place. It is imperative that there are clear and comprehensive regulations to ensure rigorous protections and controls.

The case for Big Data is further supported by the World Economic Forum’s Mobile Financial Services Development Report. The report highlights the general importance of data collection and sharing in MFS development. Among the report’s key findings, in fact, is that those countries lacking the most data also appear to be the least conducive to a mobile financial services ecosystem.
Cross-sectoral Opportunities for Collaboration

Core sectors such as agriculture, education, healthcare, retail and energy face several common challenges, for example, stretched resources and infrastructure shortages. It is important to foster development in these sectors by incentivizing the right behaviour and establishing the required infrastructure so that limited resources are gainfully employed and so the required services reach all of the beneficiaries they are supposed to reach. Let us look at several of those specific sectors and impact MFS can create in them:

Agriculture
More than 1 billion people worldwide earn their living in agriculture; most are small-scale farmers in developing nations. Many are located in remote areas that lack communications infrastructure and basic financial services. Mobile communications in general have the potential to improve agricultural efficiency, increase farmers’ earnings and reduce the environmental impacts of increasing food production. By 2020, MFS alone has the potential to raise agricultural income by an estimated US$ 51 billion out of a US$ 138 billion total increase in society’s aggregate income afforded by mobile communications as a whole.

MFS enables farmers to access wages or subsidies without having to travel long distances, accumulate funds without having a bank account to cover emergencies, and obtain insurance against crop failure as well as to receive claims. Farmers can also obtain microloans from afar, which enable them to invest in tools, machinery, seeds and other inputs, thus boosting their productivity. Receiving funds electronically eliminates delay, erroneous payments and potential fraud. In India alone, the impact of such a programme could be enormous – the Ministry of Chemicals and Fertilizers issues US$ 16.9 billion in fertilizer subsidies annually.

Health
Experts estimate that more than 1 billion people will lack access to healthcare systems in 2012. Also studies show that health shocks are a leading cause of financial distress or devastation. MFS can enable healthcare sector in two ways – by providing basic financial services and by gathering mobile enabled transaction data.

MFS can help medical providers efficiently pay salaries, support voucher payment systems and issue supplier payments. For patients, MFS is a means of remitting payment for healthcare services.

There are multiple problems in healthcare that can be solved using mobile enabled healthcare data. First, there is no standard to capture large-scale health-related information. This results in misleading statistics, which have a direct impact on budget allocated to fight a particular disease. Second, there is a lack of any comprehensive record of different types of health workers and their skill levels. This means that the right health worker is not available at the right place or time when required.

Mobile enabled services (financial and non-financial) can be used to mitigate some of these issues. For example, millions of transactions through mobile phones can be captured to enable e/m-health services and enhance health services. The fundamental change that mobile, along with a unique identity system, will bring is that all records can be digitized, stored and shared across systems.

Retail
More than 90% of the transactions in emerging economies use cash. Although the penetration of credit cards and debit cards remains low in these geographies, there is a strong case to be made for ubiquitous mobile phones giving rise to new payment models. MFS provides easier, cheaper and faster ways to send and receive money, to handle peer-to-peer transfers and to take care of all C2C or C2B transactions in a very convenient manner.

Retail outlets can use NFC or other kinds of emerging communications technologies to ensure faster transactions. Furthermore, MFS enables retail transactions to be tracked in detail so that providers can quickly understand usage patterns and respond by developing customized products and offerings for their customers.

Most of these applications, however, will be possible only on the basis of significant collaboration and cooperation within sectors and across sectors. Also, many of these applications will be facilitated by individuals and organizations with entrepreneurial mindsets that focus on the new business opportunities that MFS could potentially offer.

While only a couple of opportunities have been discussed, Phase-II presents a breadth of opportunities for MFS impacting various sectors. MFS can, in a way, be equated to the emergence of the Internet. As we stand at the point of its evolution, it is very difficult to predict how wide and diverse its usage will be. However, what we can be sure of is that once it scales up fully, it will change the social and business infrastructure of developing nations, affecting government-to-resident, business-to-business and business-to-consumer interactions in a revolutionary manner.
Conclusions: Promoting Rules and Providing Tools – The Yin and Yang of MFS Ecosystem Development

Throughout the developing world, the rapid adoption of the mobile platform, along with parallel breakthroughs in computing and communications technology, has fed abundant enthusiasm for mobile financial services. MFS represents more than a means to achieving the goal of financial inclusion; it can offer potentially enormous financial benefits to governments (and citizens) while advancing economic development in general.

Yet major obstacles persist. Many of those obstacles result from the lack of coordination or cooperation between government and market participants. Establishing a sound infrastructure is a widespread challenge, and is not particularly feasible in a purely free-market context. Many players grapple with the challenges of identifying a viable business model, overcoming regulatory barriers, or knowing what risks and protections they – and their customers – face. As a result, in many regions and many nations, MFS development has often stalled, with government and private players alike waiting to see what “the other side” will do.

To develop and flourish, healthy markets require checks and balances. Governments must strike a balance between enabling and supporting MFS and instituting appropriate checks and balances that ensure fair competition, a smoothly functioning marketplace, consumer protection and safeguards for providers. Risks to the system as well as to institutions, organizations and individual stakeholders must be properly mitigated. For these reasons alone, a wait-and-see posture may cost governments dearly in forfeited savings, economic activity, tax revenues and opportunity.

Government can absolutely play the role of key enabler, proactively working with the private sector to accelerate MFS development. In this paper, we have emphasized governments’ important roles across the two phases of MFS development: driving new efficiencies and building new capabilities. As advocate and watchdog, government can help resolve many of the larger issues – overcoming the limits and drawbacks of a solely free-market approach.

Across the two stages of building new efficiencies – in the formative stages as an enabler and in scaling-up stages as a participant – government can help promote critical activities, facilitate creation of a secure framework for personal data, implement a balanced regulatory framework, and ensure course correction while launching new initiatives, essentially carefully managing its evolution.

In parallel, government can very effectively spearhead security and regulatory frameworks and sponsor pilot programmes. It can leverage its monetary power to kick-start wide-scale use, for example by adopting MFS for its own G2P payments, which could give developing nations’ government benefits of up to US$ 100 billion. At the same time, Phase II, the transformative phase of building new capabilities, holds great promise. Here, the MFS market helps societies to accelerate toward the goal of financial inclusion. MFS can fuel other economic benefits by pulling ancillary levers such as Big Data and cross-sectoral collaboration and by augmenting organizations’ value chains.

The potential roles and examples described in this paper can serve as the basis for constructive dialogue among governments and private players. Organizations’ leaders and policy-makers might also consider the following questions as springboards for discussion and catalysts for action, both now and in the future.

- How do we develop MFS in ways that limits risk and cost? How do we create feedback mechanisms that enable initiatives to be continually course-corrected? A full national system roll-out can be impossible, if not impractical, taking far too long to launch. Pilot programmes offer many advantages: the chance to test and learn quickly, to rectify mistakes and limit risk, and the ability to instil confidence in providers so they are willing to invest and experiment.

- What types of pilot programmes have some nations already implemented? How were they designed to help providers and others understand market dynamics and rectify mistakes quickly? In what ways can pilot testing lead to better-designed products?

- What short-term needs might we address that can help trigger long-term development? Often, the removal of one obstacle can unleash activity in the marketplace at large – a veritable snowball effect. From nation to nation, these obstacles vary. For example, releasing 3G licenses may help telecoms expand their customer base and achieve the scale they need to pursue development of mobile payment services. Elsewhere, government may stimulate activity simply by stipulating clearly which entities it would legally allow to serve as business correspondents – whether telecoms or municipal governmental agencies. Resolving such issues can be just the trigger needed to build momentum and attract players to the marketplace.
− How can private players help shape the government agenda for advancing the adoption of MFS? Private players must undertake their own limited pilot programmes to test the waters, for example, by using MFS to pay their own employees. Global providers (whether telecoms or financial services organizations) might share insights from their experiences in other national markets to help governments learn from others and to accelerate their own agendas.

− How can we harness the opportunities available from Big Data? Big Data might well be the most significant incentive for private players and government alike to make the needed investments in MFS development.

  How can we leverage our databases to provide the kind of aggregate data on consumers — everything from demographic information to income levels and borrowing practices — that will help private players get the answers they need to design appropriate products and business models?

  What are the legal and practical issues we need to resolve to provide the necessary market insights for service providers while ensuring all the right protections for citizens’ privacy?

Of all the critical questions, the most fundamental one that government leaders must ask themselves is this: What is the cost of inaction? Private players may lose interest in markets where regulatory, operational and market risks are too indeterminate. Governments risk losing billions of dollars if they forgo the many cost-savings opportunities that MFS offers. Ultimately, doing nothing means ending up with a system that either develops dysfunctions, or not at all, forfeiting the tremendous social and economic benefits that are so urgently needed.
End Notes


Additional Sources


Pickens, Mark, David Porteous and Sarah Rotman. “Banking the Poor via G2P Payments”. CGAP Focus Note 58.

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