Financial Inclusion and Integration through Mobile Payments and Transfer

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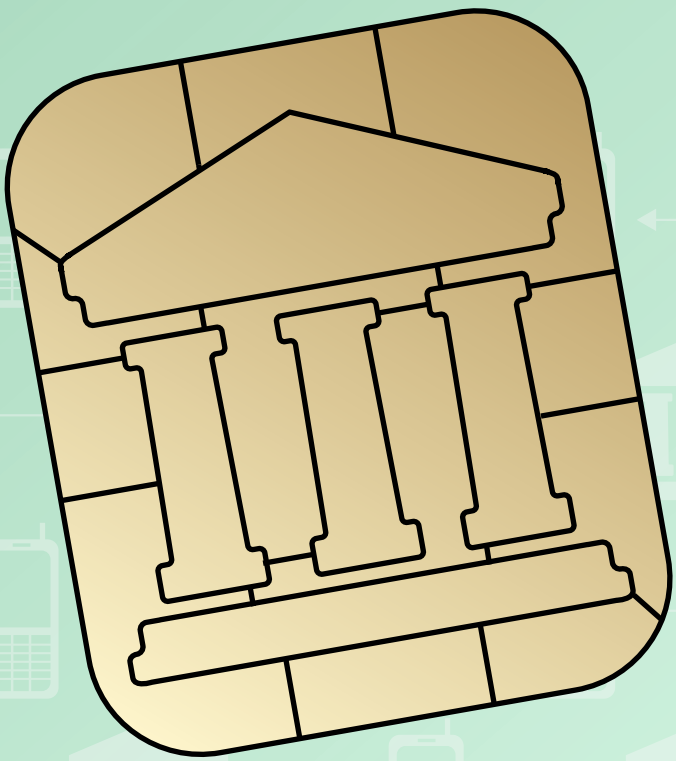

AFRICAN DEVELOPMENT BANK GROUP

YES BANK

Financial Inclusion and Integration through Mobile Payments and Transfer

Sponsored by India-Africa Economic Cooperation Fund

Proceedings of Workshop on "Enhancing Financial Integration through Sound Regulation of Cross-Border Mobile Payments: Opportunities and Challenges"

Venue: Trident Hotel, Mumbai, India
Date: March 29-30, 2012

AFRICAN DEVELOPMENT BANK GROUP

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1 The top 10 Indian banks accounted for a significant 57% share of the total credit as on March 31, 2011.

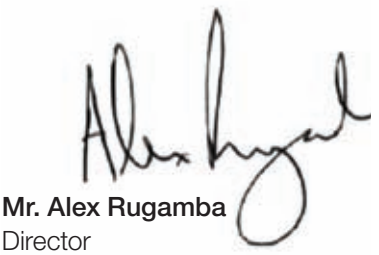
Foreword

Mobile payments technology is becoming increasingly significant, especially in the context of developing economies, where many low income households and microenterprises do not have ready access to financial services. Mobile payment facilitates financial inclusion, and offers potential for financial integration.

Over the last five years, mobile financial services have grown significantly in India and Africa. The rapid growth in the mobile money industry, in particular, has led to increased access for the less privileged and the disadvantaged population to affordable financial services not only within, but also across borders. Despite the opportunities this provides, the rapidly developing technology poses a challenge to regulators to support cross-border payments in a world that is also engaged in combating the rise in money laundering, terrorist financing, fraud and other financial crimes.

This publication is a product of a workshop organized by the African Development Bank and the YES BANK on '*Enhancing Financial Integration through Sound Regulation of Cross Border Mobile Payments: Opportunities and Challenges*' held in Mumbai, India on March 29-30, 2012. The workshop provided a useful forum for the exchange of views on the growth of mobile banking: how different policy and business models have adapted to different ecosystems, the success factors to sustain the growth of a product, as well as practical strategies for regulating the service. This publication has freely used the presentations and proceedings of the workshop and ingeniously combined them with materials available elsewhere (as cited) to examine the key issues and suggest the most pertinent options for African as well as Indian policymakers, regulators, banks and mobile network operators on how to tackle emerging challenges and opportunities.

We trust you will find this publication useful in your quest for a better understanding of the directions of growth in mobile banking, especially cross-border processes, and the options for regulating the service.



Mr. Alex Rugamba
Director
Regional Integration and Trade
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Dr. Rana Kapoor
Founder, Managing Director & CEO
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Preface

This report is an output of the Indo-African knowledge exchange workshops. The workshops were conceived by the African Development Bank in 2011, and we are pleased to collaborate with YES BANK in successfully delivering the first workshop on '*Enhancing Financial Integration through Sound Regulation of Cross-Border Mobile Payments: Opportunities and Challenges*'. The Regional Integration and Trade Division appreciates the efforts of the task managers in the two institutions, and the support extended by their teams, as acknowledged. We are also particularly grateful for the financial support of the Government of India through the Indian Trust Fund, which is hosted by the African Development Bank. We are also very thankful to the Office of the India Executive Director which played a valuable role in facilitating this partnership with the Government of India.

Supporting improvements in financial infrastructure, including cross-border regulation of financial services, is part of African Development Bank's work to enhance regional integration and trade in Africa and increase the continent's access to global markets, which indeed finds resonance in YES BANK's initiatives as a full service commercial Bank. While the workshop was originally conceived with a slant on the soft infrastructure, it became clear that understanding the opportunities and challenges for service providers and other stakeholders was also important in formulating and implementing appropriate regulatory frameworks and facilitating their cross-border harmonization. The participation of various stakeholders across sectors was, therefore, helpful in this regard.

The workshop initiated a lively and spirited interchange from the onset, as the appropriateness of various delivery models were debated following the thought-provoking keynote address delivered by Dr. K. C. Chakrabarty, Deputy Governor, Reserve Bank of India, through to the discussions on the success factors and the changing ecosystems and important role of innovation, and also how regulation can enhance progress. Much of the enthusiasm that marked the gathering came from the interactions of participants from countries with different financial sector challenges and opportunities and at different stages of development of mobile banking services as well as stakeholders with different concerns. The diversity helped to significantly improve the perceptions of the realities and to enrich the recommendations.

The Regional Integration and Trade Division along with YES BANK have drawn from the rich discussions that took place to produce this publication. The Division's Task Manager for the workshop was supported by a team put together by YES BANK spearheaded by Mr. Anand Bajaj, Group Executive Vice President & Chief Innovation Officer to capture the discussions which have benefitted the production of this publication. Various presenters and other participants as well as the Bank staff have also provided useful comments, as acknowledged.

This publication is produced for wider readership, and reflects the continuing effort of the African Development Bank and YES BANK to encourage research and debate on the development of mobile banking. On its part, the Regional Integration and Trade Division will continue to pursue work on cross-border regulation of mobile banking, as part of its broader agenda in supporting improvements in the regional financial infrastructure, while YES BANK will further continue to enhance its coverage in delivery of mobile banking services.

The African Development Bank and YES BANK both believe in consulting widely, and we count on the support of all stakeholders for achieving our objectives. However, we expect that collaboration will not only stop at dialogue, but also in the implementation of concrete actions in our client countries. It is our hope that through the results of our partnership with stakeholders, development prospects in our client countries will continue to be enhanced.

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Acknowledgements

This publication was prepared by the Regional Integration and Trade Division of the African Development Bank Group (AfDB). The findings of this report, however, do not necessarily reflect the opinions of the AfDB senior management and board of directors.

The report was drafted by Dr. Jian ZHANG, Principal Macroeconomist, AfDB with inputs from a team at YES BANK Limited, spearheaded by Mr. Anand Bajaj, Group Executive Vice President & Chief Innovation Officer. Dr. Michael Mah'moud, Consultant, also contributed useful inputs and comments and made editorial suggestions . Ms. Moono Mupotola, Manager, Regional Integration and Trade Division, AfDB, provided overall supervision. The report is based on presentations made by invited speakers and session panelists as well as the open discussions by the participants. The African Development Bank and YES BANK commend the work of the team of drafters and wish also to thank presenters, panelists and participants for the fruitful outcome of the workshop.

The organizers also appreciate valuable comments received from the following participants, who reviewed the report: Mr. Manoj Sharma, Director Asia and a Development Finance Specialist, MicroSave; Mr. Ibrahim Abdullahi Zeidy, Coordinator, COMESA Monetary Institute (CMI); Mr. Stephen Mwaura Nduati, Head - National Payments Systems, Central Bank of Kenya; Mr. H Agbai, ABOSI, Secretary General, West African Bankers' Association (WABA); Mr. Boukary Zongo, Director of Operations and Electronic Banking Standards of GIM, WAEMU; and Prof. Kinandu Muragu, Executive Director, Kenya School of Monetary Studies. Appreciation is also due to the following African Development Bank staff, who also reviewed the report: Dr. Lachaal Lassaad, Chief Training Economist at the African Development Institute; Mr. Gabriel V. Mougani, Chief Financial Specialist at Regional Trade Division; Mr. Enock Yonazi, Principal Infrastructure Specialist at the ICT Division; Mr. Themba Bhebhe, Principal Operations Officer at Operations Committee; and Mr. El Kettani, Oumama, Investment Officer at Financial Institution Division

Acronyms and Abbreviations

AfDB	African Development Bank
AML	Anti-Money Laundering
ACH	Automated Clearing House
ANMs	Agent Network Managers
ATM	Automatic Teller Machine
BC	Business Correspondent
B2B	Business to Business
B2P	Business to Person
CBS	Core Banking Solution
CDMA	Code Division Multiple Access
CEO	Chief Executive Officer
CFT	Combating the Financing of Terrorism
CGAP	Consultative Group to Assist the Poor
COO	Chief Operating Officer
COMESA	Common Market for Eastern and Southern Africa
CRM	Customer Relationship Management
CSP	Customer Service Points
EAC	East African Community
E-Banking	Electronic Banking
ECOWAS	Economic Community of West African States
ECS	Electronic Clearing Service
EU	European Union
E&Y	Ernst & Young
FEMA	Foreign Exchange Management Act
FI	Financial Inclusion
FI4FI	Frugal Innovation for Financial Inclusion
G2P	Government to Person
IATA	International Air Transport Association
GCC	Gulf Cooperation Council
IDRBT	Institute for Development and Research in Banking Technology
IFC	International Finance Corporation
IMPS	India Mobile Payment System
INFAST	Interoperable Infrastructure for Accounting Small Transactions
ISB	Inclusive and Social Banking
IVR	Interactive Voice Response
KYC	Know Your Customer
KYR	Know Your Resident
M-Banking	Mobile Banking
MCBF	Microfinance Capacity Building Fund
MD	Managing Director
MDF	Migration and Development Fund
MFIs	Microfinance Institutions
MFS	Mobile Financial Service
MNO	Mobile Network Operator
M-Money	Mobile Money
M-payment	Mobile Payment
MTSS	Money Transfer Service Scheme
NBFC	Non-Bank Financial Company
NCAER	National Council of Applied Economic Research
NFC	Near-Field Contactless Communications
NGOs	Non-Governmental Organizations
NEFT	National Electronic Fund Transfer
NPCI	National Payments Corporation of India
PEST	Political, Economic, Social and Technical
PDA	Personal Digital Assistant
PIN	Personal Identification Number
PNB	Punjab National Bank
POS	Point of Sale
PSSA	Payment and Settlement System Act
P2P	Person to Person
PPP	Public Private Partnership
RBI	Reserve Bank of India
RECs	Regional Economic Communities
REPSS	Regional Payment and Settlement System
RSP	Regional Strategy Paper
RTGS	Real Time Gross Settlement
SADC	Southern African Development Community
SBI	State Bank of India
SHG	Self- Help Groups
SIM	Subscriber Identity Module
SMS	Short Message Service
STR	Suspected Transaction Report

SWOT	Strength, Weakness, Opportunity and Threat
TRAI	Telecom Regulatory Authority of India
UBI	Union Bank of India
UEMOA	*Union Economique et Monetaire Ouest Africaine*
UID	Unique Identification
UIDAI	Unique Identification Authority of India
USSD	Unstructured Supplementary Service Data
WABA	West African Bankers' Association
WAP	Wireless Application Protocol
WAEMU	West African Economic and Monetary Union (or UEMOA in French)
WAMI	West Africa Monetary Institute
WAMZ	West Africa Monetary Zone

Abstract

Mobile payment is financially inclusive and offers potential for financial integration. This publication concerns how the potential can be leveraged through appropriate regulations to enhance not only financial inclusion but also cross-border financial integration. Based on Indian and African models, it examines progress and challenges at the national levels, while also providing insights into what would be required to take the growth of mobile banking and payments beyond national borders and to enhance the platform for regional financial integration.

In order to enhance growth and contribution of mobile payments to financial inclusion and integration, Indian and African governments have adopted either bank-led models or non-bank-led ones in line with national economic and financial sector development. The results are mixed: some are successful; and some, not.

Adoption of particular models is not a sufficient condition for the success of mobile payment programs. The existence of adequate critical success factors in the ecosystem is also important. Critical success factors include risk-based regulation for a cheaper and profitable but secured solution to financial exclusion, policy-led interoperability for an increasing scale of economies, development-oriented support for outreach through agents, and win-win partnership for all the stakeholders. Wherever there are adequate critical success factors, mobile payment programs are successful, as the case of MPESA in a few East African countries. Regional real time gross settlement (RTGS) systems with a mobile switch would have helped further and enabled landlocked small economies in the tripartite arrangement to benefit further from low-cost mobile money services across borders.

The same is true in West Africa. In WAEMU's landlocked economies, mobile payment programs would have turned out successful too with adequate critical successful factors in the ecosystems (adequate retail agent network for example) Most WAEMU banks are recommended to adopt CRM-based core-banking solutions, reengineer business processes, build ICT-enabled retail banking expertise; and extend their distribution network of nonexclusive agents. In addition, telecom companies have been selectively privatized; and investments in ICT and other regional infrastructure further increased.

To push banking penetration towards full financial inclusion Indian policy makers and regulators have adopted powerful measures, such as permitting 'for profit' companies to serve as banking correspondents and launching an interbank mobile payment system (IMPS). But despite initial successes much still remains to be done. A stronger ecosystem would have helped further in this direction.

To facilitate financial integration through mobile payments in and beyond African borders, development partners are recommended to support establishment of sound regulations, help identify key constraints with more upstream studies, work out and prioritize solutions, engage in policy dialogues, institutional and skills capacity building in addition to mobilizing resources for regional mobile payment systems to connect landlocked countries. Drawing on Indian experiences, regional RTGS, with a similar IMPS and introduction of "Aadhaar"-type Scheme (electronic unique identity number project) introduced, should contribute significantly to financial inclusion and integration in African RECs, so long as payment regulations are harmonized among members. However, no recommendation for financial inclusion through cross-border mobile transfers will be given until a sound domestic ecosystem is rooted on the ground.

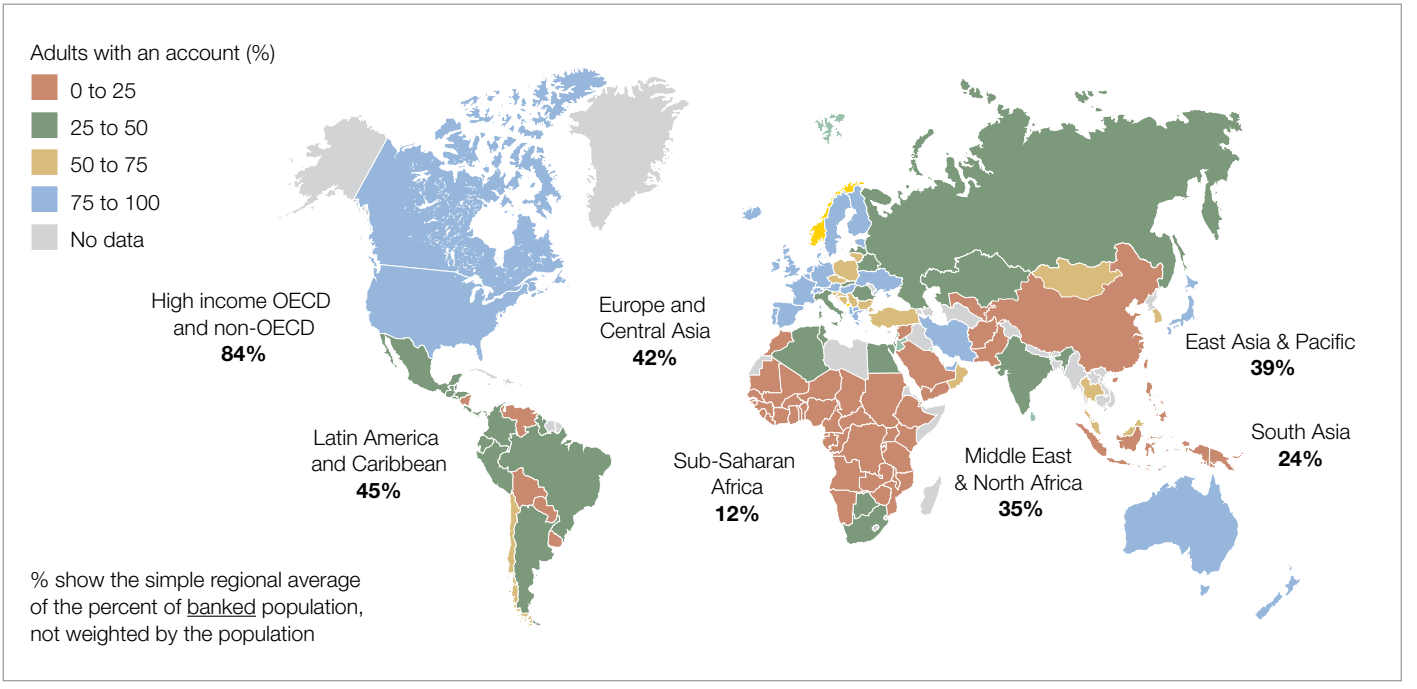
1. Introduction[2]

"Drawing from Kenya on financial inclusion (M-PESA and M-KESHO products), governments could facilitate the rolling out of technology driven mobile banking services, which have worked exceptionally well in that country, and could be replicated regional-wide. In that regard, governments would also gain by facilitating movements of people, easing border controls, and encouraging cross-border investments, and investments in regional infrastructure".

Mr. Mthuli Ncube, Chief Economist, AfDB

1.1 The prospect of cross-border mobile payments hold much promise in promoting financial integration, adding to its benefits for financial inclusion at the national level. However, there are also challenges that must be addressed. Based on the developments in India and Africa, this report explores the key evolving themes in the cross-border mobile payments arena, and seeks to highlight promising practices and examine critical challenges. The objective is to draw lessons from across the various countries and regions to inform policy and regulatory reforms, especially in Africa. In particular, the report discusses what the experiences in India and Africa have been regarding the benefits and challenges of mobile payments for financial inclusion and cross-border payments or regional financial integration, and addresses a range of questions. What models have been adopted across the countries to promote the mobile payments systems? What are the underlying issues that account for the successes of these models in the various countries and ecosystems? When should national authorities and/or industry operators consolidate activities or introduce innovations to meet challenges and enhance progress? In particular, the discussions seek to explore the role of regulations and how best they can be directed at enhancing regional mobile payments.

Map 1:
Global map of the financially included



Source: Peer Stein, Bikki Randhawa, Nina Bilandzic, 2011

2 The quote can be found in http://www.afdb.org/en/news-and-events/article/indeed-african-governments-have-a-key-role-as-a-partner-to-the-bank-in-achieving-inclusive-growth-mthuli-ncube-9023/.

3 Peer Stein, Bikki Randhawa, Nina Bilandzic, 2011, Toward Universal Access: Addressing the Global Challenges of Financial Inclusion

Table 1-1:
24 Poorest countries, 2010

Unit: GNI per capita, Atlas method (current US$)

Rank	Country	US$
1	Burundi	170
2	Congo, Dem. Rep.	180
3	Liberia	200
4	Malawi	330
5	Eritrea	340
6	Sierra Leone	340
7	Niger	370
8	Ethiopia	390
9	Guinea	400
10	Afghanistan	410
11	Madagascar	430
12	Mozambique	440
13	Gambia, The	450
14	Zimbabwe	460
15	Central African Republic	470
16	Nepal	490
17	Togo	490
18	Uganda	500
19	Rwanda	520
20	Tanzania	540
21	Burkina Faso	550
22	Guinea-Bissau	590
23	Mali	600
24	Chad	620

Source: World Bank[5]

1.2 The key considerations or issues are that:

- The gap in access and use of financial services remains a challenge in Sub-Saharan Africa (SSA), the most financially excluded region in the world as per Map 1[3]. This is also true of India, though to a lesser extent than those faced by SSA.

- There is however, no one-size-fit-all model of mobile payments due to different ecosystems across countries. SSA contains 22 of the 24 poorest countries in the world, as per Table 1-1. More than half of the Indian and SSA populations live below the international poverty line of US$ 2 a day,[4] with little disposable personal income after consumption. Since consumption depends on commerce and payment, the poor may have a stronger demand for transaction-based services, payment services in particular.

- To promote financial inclusion and integration, In Kenya and many other low-income African countries policy-makers have adopted nonbank-led models in line with their level of national economic and financial-sector development. In contrast, India and some middle-income African countries (South Africa, for example) have adopted bank-led models. The results on the ground are mixed: some mobile payment initiatives have been successful, but others have not. The mixed performances do not result from the adoption of either models, but from the sufficiency of success factors in their ecosystems.

- An ecosystem with adequate critical success factors includes at minimum: (1) regulation and supervision that balance IT-enabled innovation, enhanced competition through participation of business agents and facilitators, and protection of customers for a cheaper but secured solution to financial exclusion; (2) win-win partnerships among all stakeholders; (3) a technically inter-operable platform for all kinds of mobile payment products and their cross-border services; and (4) a knowledge sharing platform for educating the unbanked population about finance. When there

4 http://search.worldbank.org/data?qterm=2+dollar+a+day+poverty+line+for+africa&language=EN&format=

5 http://data.worldbank.org/indicator/NY.GNP.PCAP.CD

are sufficient critical success factors in an ecosystem, mobile payment programs tend to be successful in facilitating financial inclusion and integration in both middle-income and low-income countries.

- The question of whether to continue innovating or consolidating existing innovations may seem easy to answer, but becomes more difficult in the context of unsuccessful mobile payment initiatives. While these clearly need to be consolidated to become more effective, financial inclusion and integration is an on-going process that requires both consolidation and innovation. As a result, consolidation of unsuccessful initiatives cannot rule out further innovation so long as there are strong unmet demands and an adequate regulation of providers.

- Whether consolidating unsuccessful mobile payment initiatives or innovating future ones, banks, MNOs, mobile commerce service providers, technology firms and retailers need to co-ordinate their strategies for win-win partnerships. Balanced interests are likely to enable efficient and effective 'last-mile' delivery. Customers also need to be educated and assisted for greater convenience or accessibility, especially in remote rural areas. It is recommended that both banks and their regulators use technology as (1) an enabler of mobile financial services that enhance accessibility for the unbanked population and extend convenience for the banked; and (2) as a safeguard of mobile financial systems' stability and protection of customers' interests.

- Experience in Africa shows that (1) mobile money is financially inclusive, especially in low-income African countries (Kenya and Uganda, for example) where the ecosystem has sufficient critical success factors; (2) mobile money is not a perfect answer in an imperfect world of technology and telecoms since mobile payment initiatives will not, in themselves lead to full financial inclusion; and (3) potential solutions lie in establishing an ecosystem with the necessary critical success factors to enable a win-win collaboration between all stakeholders that brings about an effective extension of financial services to the unbanked and banked population.

- The ecosystem for cross-border payments is more complex in that there must be adequate: (1) demand from diasporas in both developed and developing countries for transferring part of their savings to relatives in their home countries; (2) partnerships among host and home country banks, MNOs, technology firms, agents, and retailers in enabling the last mile delivery of cross-border mobile payment services at affordable tariffs; and (3) coordination between host and home countries' policy makers in regulating cross-border flows of mobile commerce and mobile money. On that score, the domestic ecosystem with adequate critical successful factors can be regarded as the prerequisite for launching a cross-border mobile payment or transfer program.

- Branch-to-mobile payment from high to low-income country is less challenging than the other way around. Accordingly, African regulators are advised to sequence cross-border mobile payment programs. They may begin with approving inward remittances from selected bank or non-bank branches in advanced countries (such as the US and European Union and Gulf Cooperation Council members), where most of the African diaspora lives and works, to approved Subscriber Identity Module (SIM) cards of mobile phone users in their countries. As their regulatory capacities grow in this area, they may also collaborate with each other to harmonize regulation of mobile-to-mobile payments between low-income African countries.

1.3 The report is presented in seven sections. Following this introduction, part two explores the debate over bank and nonbank-led policy models for mobile financial services (MFS), followed by a discussion of the important role of technical platforms in the ecosystem in part three. Part four focuses on the debate over innovation versus consolidation, while part five addresses the impact of mobile payment programs on financial exclusion. Part six discusses the regulation of cross-border mobile payment programs which is followed by the concluding section.

2. Policy models for mobile payments programs

2.1 Context for debate on policy models

2.1.1 Over the past five years, there has been a debate on the appropriate policy models for technology-enabled mobile financial services, and their impacts on financial exclusion in India and Africa. Technology has brought about previously unimagined changes in people's lifestyles. An electronic device is generally regarded as one of the most appropriate delivery channels for financial services. Indeed, mobile users out-number bank account holders in India and many African countries. As a result, both Indian and African governments have regarded mobile technology as one of the most promising tools for expanding access to finance and achieving financial inclusion due to the ubiquity of mobile phones and good mobile network coverage, even in rural areas.

2.1.2 In very broad terms, financial services can be classified as including making payments, mobilizing savings, allocating capital funds, monitoring users of funds and transforming risks. Accordingly, financial inclusion can be defined as access to these major services. It can be measured at three increasing levels of: *"(1) access to simple cash services (cash remittance, cash transfers from organization, cash payment to organization), (2) access to some kind of current account (used for transfers and payments, but also to store small amounts), and (3) access to a broad range of financial services (project finance, current and savings account, insurance...)" among others. (Central Bank of Sudan[6], 2011)*

2.1.3 Reflecting the different levels of financial sector development and e-money ecosystems in India and the SSA countries', there is no one-size-fits-all model for financial inclusion. In terms of nominal GDP measured in current 2011 US dollars, the Indian economy is 1.5 times bigger than all of the SSA economies combined–including South Africa, which is the biggest SSA economy by far. Moreover, there is also a huge output per capita gap of over five times between low and medium-income SSA countries, as shown in Table 2-1. As over 50 % of the Indian and African populations live below the international poverty line of US$ 2 per day (CGAP[7], 2011), little disposable personal income will be left after consumption. But since consumption requires commerce and payment, the SSA and Indian poor share some common challenges: resorting to cash and having an especially strong demand for transaction-based financial services, particularly payment services.

2.1.4 Traditional banks do not regard the low-value but high-frequency transaction-based businesses as cost-effective, unless supported by technologies and use of agents. Mobile network operators (MNOs) have, however, identified a clear business opportunity in offering transaction-based mobile services (payment and transfer services for example) to their customers. Mobile payment services comprise five basic functions: mobile services, customer interface, transaction processing, account provision, and settlement, as per Figure 2-1. Mobile service is always provided by MNOs; and settlement, by banks. Interface, transaction processing and account provision can also be provided by third-party providers. In theory, the non-bank-led model is defined as a model by which nonbank companies are responsible for all the basic functions except settlement; and bank-led model, as a model by which banks take over at least account provision and settlement.

Table 2-1:
Sub Saharan African countries' real per capita GDP 2004-2012

(US$, at 2000 price, using 2000 exchange rates)

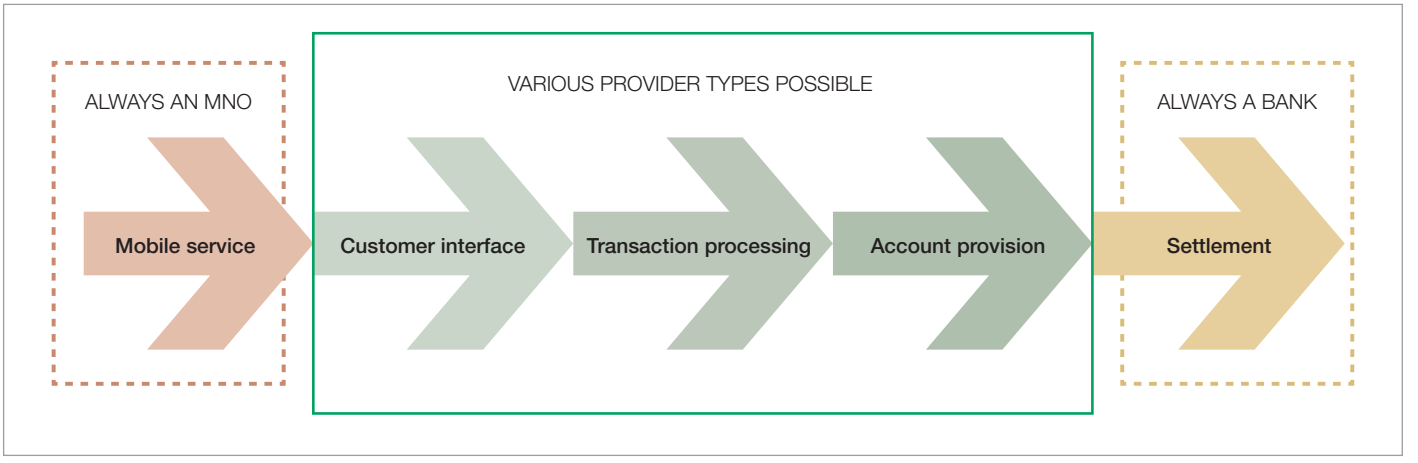
	2004-08	2004	2005	2006	2007	2008	2009	2010	2011	2012
Mid-income countries	2,083	1,950	2,014	2,090	2,159	2,203	2,143	2,181	2,232	2,280
South Africa	**3,553**	**3,281**	**3,422**	**3,576**	**3,699**	**3,788**	**3,683**	**3,748**	**3,829**	**3,919**
Low-income countries	260	242	250	259	269	277	283	291	297	308
Kenya	**441**	**414**	**430**	**444**	**461**	**454**	**453**	**464**	**475**	**489**

Sources: IMF, African Department database

6 Central Bank of Sudan, January 2011, Study for the Establishment of Pro-Poor Branchless Banking in Sudan.

7 In 2009, the GSMA launched the Mobile Money for the Unbanked (MMU) program, aimed at accelerating the provision of money services to those living on less than $2 per day. Please refer to CGAP Technology Program: India Focus Country, 2011, too.

Figure 2-1:
Main functions of mobile payment services



Source: World Bank

2.1.5 Under a bank-led model for mobile payment service, customers have a direct contractual relationship with a licensed financial institution. In contrast, under a nonbank-led model they exchange cash for electronic value recorded in a virtual account on the server of a non-bank organization, such as a MNO or an issuer of stored-value cards. Non-bank led models can be used to facilitate mobile payments and transfers but not more sophisticated banking services, such as savings and credits, unless associated with bank-led models. Banks are often hesitant over the large fixed-cost investments of setting up and maintaining branches in remote rural areas where operating costs may exceed operating profits. At the same time, without sufficient business correspondents (BCs) they cannot facilitate financial inclusion effectively. But with increasing use of BCs and communications technology, bank-led and non-bank led models tend to converge in a banking-beyond-branch arrangement.

2.1.6 A banking-beyond-branch arrangement can be understood as transferring most low-risk (normally low-value too) banking transactions to a lower-cost and more ubiquitous retail channel – say a corner store selected according to central bank guidelines. The store is supposed to perform most low-risk banking services for both banked and unbanked customers on behalf of the associated banks. Low-risk banking services, such as mobile payments and transfers, can be undertaken safely as long as the store works in accordance with anti-money laundering/combating the financing of terrorism (AML/CFT) measures such as suspicious transaction monitoring and tracks its operations by electronic audit trails connected to the bank technology platform. The trails aim to ensure that cash in between the customer bank account and that of the store is equal to cash out.

2.2 Indian model

2.2.1 With increasing adoption of technology by banks, it is natural that all stakeholders expect benefit from it. The target that the benefit should be enjoyed by all walks of life has been focus of the Indian Government. In expectation of facilitating full financial inclusion with wide use of mobile phones, The Indian Central Bank (the Reserve Bank of India) has adopted a bank-led model. It was estimated at the end of January 2012 that mobile phones were close to 1 billion in India, as per Table 2-2, which would make banking and financial services accessible even to 40% (approx.) of unbanked population by mobile phones.

Table 2-2:
Estimated mobile penetration in India

(US$, at 2000 price, using 2000 exchange rates)

	2010	2011	2012(F)	2013(F)	2014(F)	2015 (F)
Penetration	49%	60%	77%	80%	86%	99%
Million	584	730	960[8]	999	1093	1250

Sources: Deloitte and Telecom Regulatory Authority of India

8 The original estimated number 888 million, 72% penetration.

"Just as you cannot have tele-medicine without a doctor, you cannot have mobile banking without a bank!"

Dr. K. C. Chakrabarty, Deputy Governor, RBI

2.2.2 The Indian model is based on the supposition that the use of mobile phones for banking in financial inclusion cannot become a viable proposition on a standalone basis if the purpose is to achieve meaningful financial inclusion[9]. For financial inclusion, mobile payments have to be provided as a package along with other products and services. This package can be offered only by the companies that can provide add-on services like emergency and entrepreneurial credit, saving facilities, other products and services such as insurance, besides remittances. This is where a mainstream regulated company like a bank fits in.

2.2.3 In India, non-bank companies are often thought not to be able to offer a range of financial products, which are important from the point of view of financial inclusion (FI). This does not mean that non-banks have little potential to play an important role in the FI process. With an extensive network of retail outlets, even in remote places where there is no bank branch, mobile operators can partner with banks as business correspondents to ensure that mobile banking reaches the last mile in view of its spread and usage; and that a healthy partnership between banks and mobile services providers (MSPs) augur well for the FI process. In consideration of the above, India has adopted a bank-led full financial inclusion model.

2.2.4 Bank-led full financial inclusion models have to be agent-based, technology-led and customer-oriented[10]. To contribute to financial inclusion through guided banking outreach in India, RBI issued, in 2006, a circular on Financial Inclusion by Extension of Banking Services, allowing banks to employ two categories of intermediaries—Business Correspondents (BCs) and Business Facilitators (BFs) - to expand their outreach. According to the circular, while the BCs are permitted to carry out transactions on behalf of the bank as agents, the BFs can refer clients, pursue the clients' proposal and facilitate the bank to carry out its transactions, but cannot transact on behalf of the bank. The basic arrangements for banks' operating beyond branches with assistance from BCs and BFs can be found in Figure 2-2.

2.2.5 Agent-based banking-beyond-branch operations should be leveraged on scalable ICT technologies that market participants may develop to best suit their requirements. The RBI circular was issued at a time when a vast array of new technologies had become available, offering new and inexpensive ways for transactions to be managed from remotely located offices. These inexpensive ways include among others POS Devices and Mobile Phones. The combination of these new technologies with the new circular inspired a number of efforts in India to experiment with the BC/BF model in late 2010. New organizations were formed to offer BC services. Some of the efforts also included responding to government policy to open 'No Frills Accounts' and to process Government payments (G2P) such as the National Rural Employment Guarantee Scheme, Pensions and other social payments.

2.2.6 It is not without branches, but beyond them that agent-based, technology-led banking operations can be conducted. Technology in itself cannot replace bank staff to provide tailor-made, homelike services to their customers; and supervise the uses of funds on behalf of depositors. Just as tele-diagnostics cannot exist without a doctor, mobile banking cannot operate without a bank. The BC model would help to complement mobile banking, as customers need to approach BCs/ATMs only for hard currency requirements and conduct other banking transactions from anywhere from their mobile phones, provided of course, there are no tele-connectivity issues.

2.2.7 To guide mobile financial services in India, RBI issued the operating guidelines for mobile banking in October 2008, which were later relaxed in December 2010, facilitating mobile banking transactions up to Rs.50000, both for e-commerce and money transfer purposes. Indian banks had also been permitted to provide money transfer facility up to Rs.5000 from a bank account to beneficiaries not having bank accounts with cash payout facility at an ATM or Banking Correspondent. According to RBI, by the end of the first quarter 2012, sixty five banks had been permitted to offer Mobile Banking transactions, of which forty seven had started operations.

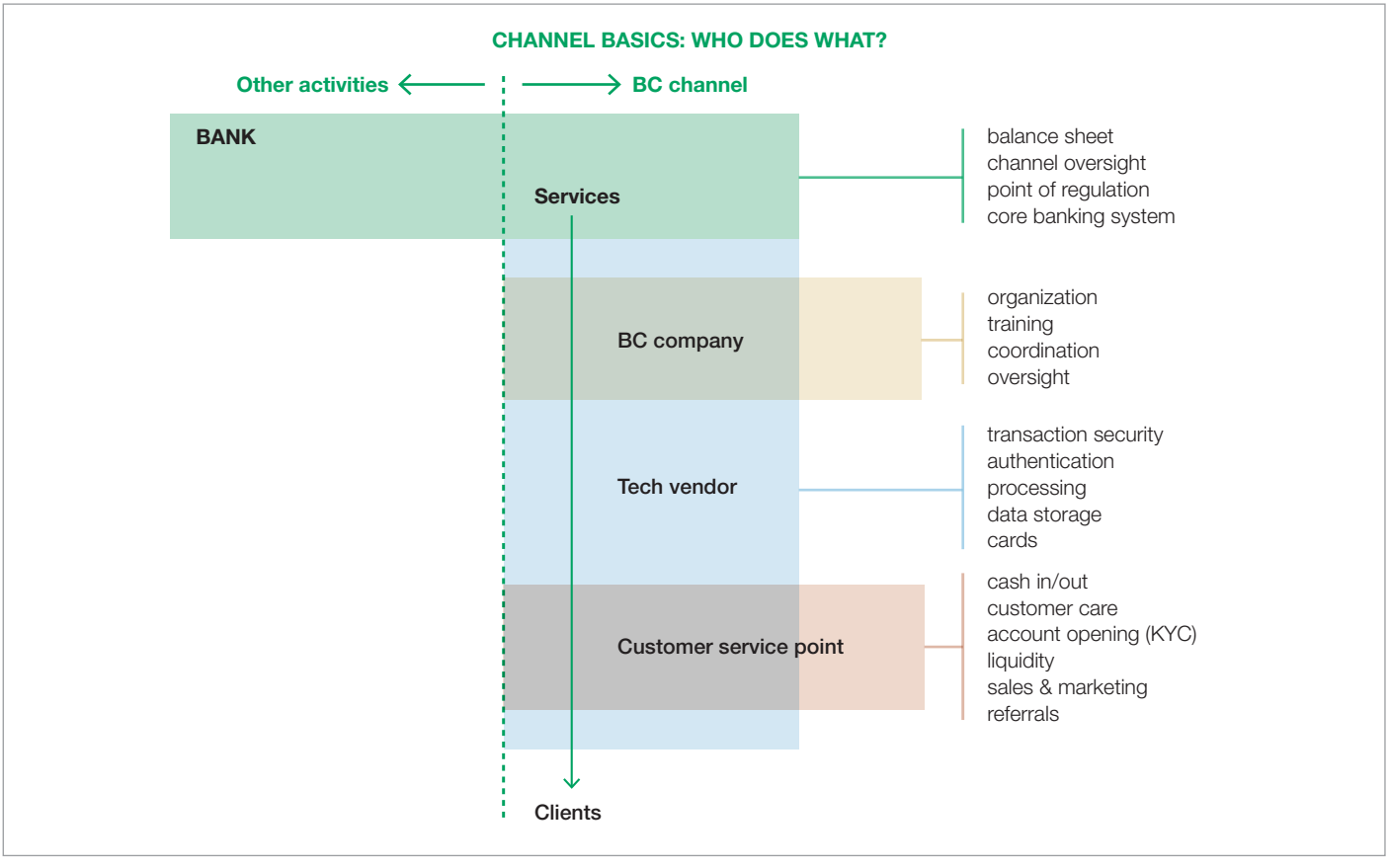
9 Dr. K. C. Chakrabarty, Deputy Governor, Reserve Bank of India

10 Dr. K. C. Chakrabarty, Deputy Governor, Reserve Bank of India

2.2.8 Accelerating the ICT-enabled financial inclusion process in India, RBI and a collection of Indian commercial banks have established an interbank mobile payment system (IMPS), a specialized switch for mobile phone transactions, through the National Payment Corporation of India (NPCI). The IMPS has enhanced the efficiency of mobile banking by enabling real time transfer of funds between bank accounts and providing a centralized interoperable interbank settlement service for mobile banking transactions with confirmation features.

2.2.9 In addition, to facilitate financial inclusion through remittances by the diaspora community, RBI has *"permitted banks to enable cross border bank account to bank account remittance through the medium of mobile, subject to clearance from the local regulator; and at the beneficiary end"*, and " *enabled loading of funds received from overseas under the Money Transfer Service Scheme (MTSS) scheme on to a prepaid payment instrument issued by a bank, which could include a mobile wallet, to the recipient of the funds"* (RBI[12], 2012).

Figure 2-2:
Basic arrangements for bank's operating beyond branches



Source: Branchless Banking in India[11]

11 http://www.slideshare.net/royprasenjit/branchless-banking-in-india-6149047

12 http://rbidocs.rbi.org.in/rdocs/Speeches/PDFs/SDGMBI290312.pdf

2.2.10 As the financial market may not function as effectively as designed, RBI has been making market interventions to ensure increased banking penetration for financial inclusion on commercial terms, rather than on a charity basis. Since April 2011, Indian banks have been mandated to: (1) allocate at least 25 per cent of all new branches to unbanked rural areas; and (2) open intermediary brick and mortar structures between the base branch and customer locations to enhance efficiency in cash management, documentation, redress of customer grievances, and close supervision of BC operations.

2.3 African models

2.3.1 Africa has a high percentage of unbanked population, and the highest growth rate in mobile phone usage[13]. Over time, mobile financial services will become safer, more convenient, speedier and less costly. Currently, there are two main African mobile financial service models: (1) Bank-led model with additional services to existing customers through a mobile banking application; and (2) Non-bank-led model with transformational outreach to the unbanked population.

2.3.2 In Africa, bank-led models are most commonly found in middle-income countries (South Africa, for example) where financial sectors are relatively deep, with a remarkable diversity of distribution channels, including traditional branches such as the Post Bank[14], ATMs, mini-ATMs[15], retail institution partnerships[16], mobile phones and debit/credit cards. In contrast to their middle-income counterparts, African low-income countries are confronted with challenges from different social and economic developments. Calculated at 2000 prices and exchange rates, SSA low-income countries' average real GDP per capita is USD 308 (see Table 2-1). Besides, SSA financial sectors' depth is not as deep as that of their middle-income countries (see Table 2-3).

2.3.3 Kenya, where M-PESA was launched, is a low income country, with real GDP per capita of close to USD500 (measured at 2000 price level and exchange rates), which is four times lower than the average of the middle-income African countries; and broad money to GDP ratio of below 50%, which is about 20% lower than the average of its middle-income counterparts. Without supporting improvements of financial-sector policy, institutions and products, Kenyan banks find it difficult to serve the unbanked, due mainly to the significant costs of establishing a branch network and the tight margins associated with banking the poor.

Table 2-3:
Sub Saharan African countries' financial sector depth 2004-2012

(Share of broad money in GDP

	2004-2008	2004	2005	2006	2007	2008	2009	2010	2011	2012
Mid-income Group	67.7	58.6	63.1	68.2	73.5	75.1	73.2	70.7	72.4	73.1
South Africa	**75.6**	**64.6**	**70.1**	**76.3**	**82.7**	**84.2**	**81.3**	**78.2**	**80.9**	**82.0**
Low-income Group	28.2	27.4	27.2	28.1	29.3	28.9	29.6	32.3	33.3	32.8
Kenya	**41.2**	**40.2**	**39.4**	**40.3**	**42.5**	**43.4**	**44.2**	**49.7**	**49.6**	**50.3**

Sources: IMF, African Department database

13 Stephen Mwaura Nduati: ***How can mobile payments be used to facilitate access of Unbanked population in Africa?*** 2012.

14 Post Bank is a division of South African Post Office, and has the overall goal of providing banking facilities to people who have limited access to financial services. The minimum amount required to open an account is R10. Post bank also handles some government work, serving as an outlet to more than 217,000 pensioners. As of March 2007, the number of these accounts—known as mzansi accounts—had grown to 1.2 million.

15 First National Bank (FNB) has rolled out mini ATMs into low-income and predominantly rural areas that cannot sustain a bank branch or normal ATM. The mini ATMs, placed in small retail stores, do not physically dispense cash; but print out a voucher that is handed to the retail cashier, who then pays out the cash from his or her register. At the end of each day, the system repays the retailer (into FNB' accounts) the same amount they dispensed that day.

16 In partnership with Pick n Pay supermarket, Nedbank is providing "Go Banking" services. Go Banking allows customers to do their banking at the supermarket, including withdrawing cash, checking balances, making deposits and paying accounts. By offering more flexible hours and a greater number of locations, Go Banking makes banking easier for many low-income clients who find it difficult to visit branches during banking hours.

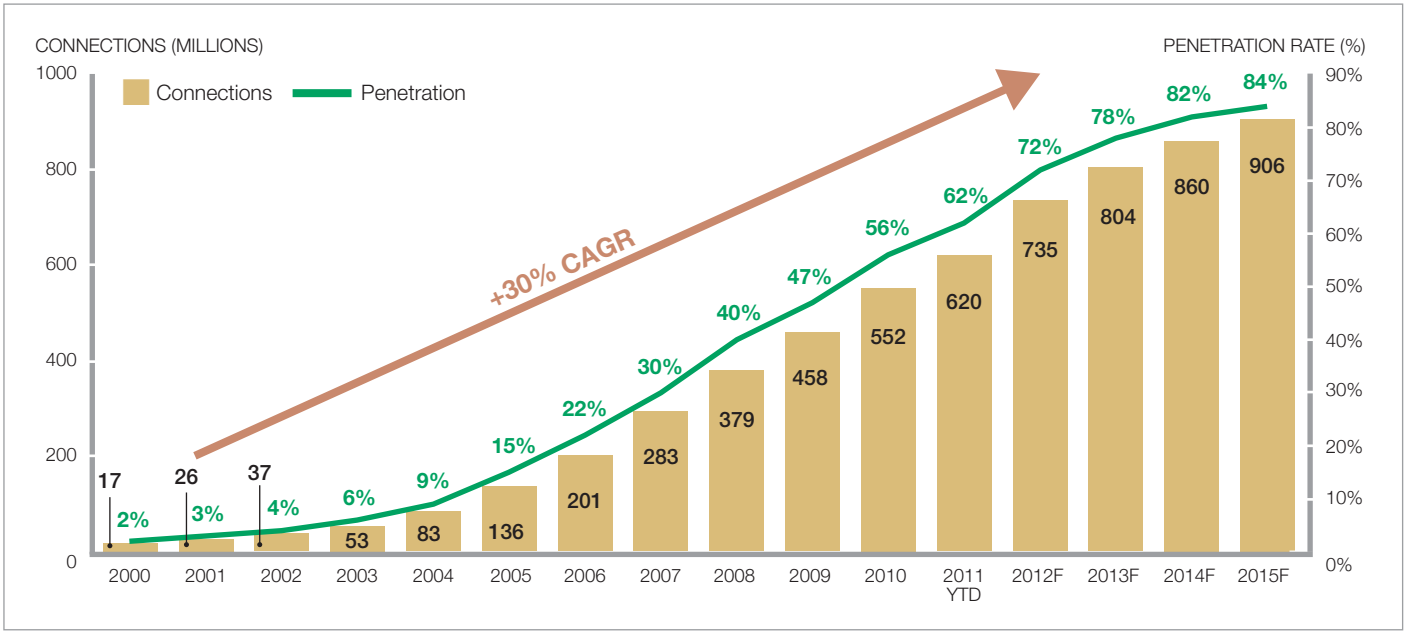
17 Financial Access Survey, 2009.

2.3.4 Kenyan citizens, especially those in remote rural areas, have limited access not only to basic economic and social infrastructure, but also to affordable financial services, such as payment facilities or savings. At the time of the M-PESA application, there were only 1.5 bank branches per 100,000 people and only one Automated Teller Machine (ATM) per 100,000 people[17]. Most Kenyan citizens were reported to be unhappy with bank services. This explains the easy switch to mobile money. It is against this backdrop that a MNO-led model (one of non-bank led models) came into being in Kenya in mid 2010s.

2.3.5 Over the past decade, Africa has experienced an annual average growth of 30% in the telephone usage. With an increasing mobile coverage on the continent, there are reported to be more than 620 million mobile phone subscribers in Africa now; which are forecast to reach 735 million by the end of 2012 (African Mobile Observatory 2011), as per Figure 2-3. Under the pressure from a narrowing profit margin due to fierce competition, most MNOs plan to diversify operations and add values to existing mobile services. Mobile financial innovations have, therefore, been on a rapid increase in Africa since Celpay started a business-to-business (B2B) payment service in Zambia in 2002; and First National Bank started a similar bank-led service in South Africa in 2005, though limited to existing customers.

2.3.6 In most cases, mobile financial innovation comes from unintended circumstances and expected sources. Among other steps to enhance financial outreach and inclusion in low-income countries, financial innovation may as well imply that one must look beyond the credit/saving-led model towards a payment-led model. Given the underdeveloped financial market and limited competition among financial institutions in Africa, many small low-income African countries consider it important to try alternative financial service providers. Against this backdrop, Safaricom innovated M-PESA in Kenya in 2007. The initial experiments in Kenya showed that mobile channels were significantly less costly than bank branches, through which the unbanked population could be reached. The success of Safaricom's M-PESA has compelled other m-money operators (such as Zap from the MNO Zain and Yu from the telecom Essar) to enter the Kenyan competitive landscape. Encouraged by Kenya's successful experience, Madagascar, Uganda, Côte d'Ivoire, Senegal and Tanzania, and many other low-income African countries have followed suit and adopted MNO-led models for extending the access of the unbanked population to payment services though mobile phones and retail agents.

Figure 2-3:
Total African mobile connections and penetration rate (million, % penetration)



Source: African Mobile Observatory 2011

2.3.7 The success of the MNO-led model is dependent on a large reliable network of agents and low risk management of electronic value for a cheaper but secured solution to financial exclusion in low-income African countries. By the end of 2011, there were over 50,000 active agents for MNOs engaged in mobile payment systems in Kenya alone (Central Bank of Kenya, 2012). In contrast to the limited retail network of WAEMU financial institutions, Safaricom has a significant number of agents. In 2009, Safaricom had over twelve thousand retail agents for over 8.5 million customers, far more than WAEMU' financial institutions' branches (one hundred banks, four hundred and two MFIs and eighteen nonbanks with Three thousand, eight hundred branches),according to the 2010 Financial Access survey.

2.3.8 While the scale of mass mobile payment operations can drive system costs down, security depends on correctly identifying and appropriately managing risks inherent in the service. MNOs and their agents pre-deposit funds (the 'float') in a bank account, from which the electronic value is used to guarantee all customer deposits and withdrawals. As customer demand for mobile payments and transfers rises, they have to increase the float to retain an adequate liquidity back-up. They must take no credit or liquidity risks if the float system is to be sustainable and widespread, even across national borders.

2.3.9 Accordingly, wide adoption of MNO-led models for MFS does not imply an 'open door' regulatory environment that permits any entity to offer deposit-taking services. Rather, it means that the regulatory environment should be open to new providers and new products that could increase financial outreach and competition. For this reason, MNOs should be treated as one of several actors within the risk-based framework of MFS regulation, especially in countries where they dominate payment flows.

2.3.10 To facilitate extension from MPS to a full suite of banking services, it would be advisable for central banks to create a regulatory framework for mobile banking. The framework should allow banks to use agent networks as a channel for increasing financial inclusion. Regulations addressing e-payments, agency guidelines and money laundering will also have to be promulgated. These are critical if mobile banking services are to deepen financial access in Africa.

2.4 Summary

2.4.1 As this section underscores, the best mobile payment model for a country depends on its economic and financial sector development. Both India and South Africa adopted bank-led models in view of their more advanced levels of development. For less developed Kenya, a non-bank led model was more appropriate. Non-bank led models are generally more suitable for low-income African countries, where banks' failures to facilitate financial inclusion require regulators to intervene in *"cushioning consumers from exorbitant charges imposed by banks"* (AFI[18], 2010) by introducing nonbank-led MPS. *"The service gives many of the mobile firm's unbanked subscribers an efficient way of transferring money"*. In the SSA middle-income countries that are already reasonably well banked and have the related infrastructure, as per Table 8-1 in part 8, bank-led models may be more appropriate.

2.4.2 Banking sectors that already enjoy significant competition may also benefit from bank-led models. In the case of India, which has a relatively competitive financial sector and a different ecosystem from those of many low-income African countries, mobile banking in India has to be bank-led. While this distinction is still useful in delineating two different models, it should be clarified that a win-win partnership between bank and non-bank institutions is one of the pre-conditions for connecting financial infrastructure to previously unbanked populations and innovating financial products and services at a price they can afford. This makes a converged banking-beyond-branch arrangement potentially both a cheap but secure solution to financial exclusion and the source of a diversified, convenient suite of banking services for India and Africa's banked populations.

18 Case Study by Alliance for Financial Inclusion on Enabling Mobile Money Services in Kenya in 2010

3. Impact of mobile payment programs on financial inclusion in India and Africa

As discussed in Section 2, selection of right mobile banking models, though important, does not necessarily guarantee the success of mobile payment programs in facilitating financial inclusion and integration. This part of the report discusses the impact of different mobile banking models on financial inclusion in the prevailing ecosystems.

3.1 Impact of mobile banking on the unbanked in India

3.1.1 In India, the primary objective of mobile banking regulation is financial inclusion. Under the guidance of RBI, Indian mobile banking transactions have been on an upward trend, but there is still far to go before they make a substantial inroad into poverty alleviation. During February 2012, more than 2.8 million transactions for close to Rs. 1961.23 million were handled; a 300 % increase in volume and more than 200% increase in value terms as compared to 0.7 million transactions for close to Rs 616.19 million during February 2011. A little over 12.23 million bank customers have so far registered for mobile banking services (RBI, 2012). However, while these numbers appear impressive, they are not encouraging in the context of the number of bank accounts (313 million) and the mobile subscriber base (936 million)[19].

3.1.3 Indian banks should have made a greater contribution to facilitation of financial inclusion in India. It is evident that mobile phones have reached more households than basic banking services. Banks have not really made a significant penetration even among their existing customers to extend mobile banking services. An important policy concern is that a significant percentage of the population remains financially excluded and the potential of the mobile phone to extend them financial services is still to be tapped.

3.1.4 The unsatisfactory performance of mobile banking in India reflects the approach and attitude of most institutions towards the financially excluded. The attitude towards the unbanked population and dialogue with them matters more than the tools or medium used to interact with them. In India, 50 million bank accounts were opened in 2011 through banking correspondents, but many accounts remained inactive for several months since the architecture of mobile payment system is cumbersome.

3.1.5 The ecosystem is also a cause for consideration. *"Mobile Financial Services (MFS) haven't taken off in India yet. The key reasons are that the players haven't been able to develop an ecosystem where M-money is really useful to the common man. Until that happens, MFS will not take off in a big way in India."*(Santhoshkumar Thiruthimana, 2012). Furthermore, demand for a saving product in India is stronger than that for a remittance product, which requires banks and MNOs to provide a joint solution.

3.1.6 The agent-driven model needs to be strengthened in India since it is the key to success in the current environment. Agents act as a gatekeeper of cash and convert physical cash into digital cash; and can guide customers and demonstrate how to use the digital cash. Across India, many potential customers are still unaware of mobile payments/ banking, and few MNOs or banks have done enough marketing to create this new need among them. Financial literacy has to be enhanced since the unbanked Indians need to comprehend mobile banking applications at least.

3.2 Impact of mobile payments and banking on the unbanked in African countries

3.2.1 It is estimated that *"2.5 billion adults, just over half of world's adult population, do not use formal financial services to save or borrow; and in Sub-Saharan Africa, 325 million people (80% of the adult population) remain unbanked as compared to only 8% in high income OECD countries. Formal financial institutions are unable to help the unbanked manage money and risks due to excessive risks and costs",* (Financial Access Initiative Report 2010[20]).

3.2.2 To facilitate access to finance to unbanked Africans, some MNOs have launched non-bank led mobile payment programs in some SSA countries. Africa is a vast region of 54 countries[21] covering 30 million square kilometers and one billion people. Treating Africa as a single entity would be to overlook the complexities of life within a huge diversity of peoples, languages and cultures within and across national boundaries. It would be impossible to cover all of these in the detail that they deserve. Kenya can be used to illustrate the impact of mobile payments on the unbanked in low-income African countries.

19 CGAP Report on India Branchless Banking 2011.

20 See: www.financialaccess.org.

21 Including South Sudan, Africa has 54 countries.

3.2.3 Taking bank accounts as an indicator, access to formal finance in Kenya, although improving over the past five years, is still limited (with bank account penetration rate being still 21% in 2010). If mobile money accounts had been used, access to financial services in Kenya would have been more spectacular with an increase from an estimated 19 percent in 2007 to more than 40 percent in 2011. According to a survey, *"usage of non-bank financial institutions more than doubled from 7.5 percent in 2006 to 17.9 percent in 2009—this could be mostly attributed to the new M-PESA service provided by Safaricom."*[22]

3.2.4 M-PESA has achieved tremendous growth since it was launched in 2007. As of December 2011, M-PESA transferred US$1.37 billion equivalent, with 40.01 million transactions; and per day transactions reaching US$44.25million equivalent. An important attraction of MPESA is its low cost (estimated at US$0.38-0.44 equivalent per transaction), and its introduction is reported to have led to a 58% increase in the number of Kenyans who have bank accounts (Stephen Mwaura Nduati, 2012). This underscores how not only do innovative mobile services provide an immediate service to the poor, but also act as a catalyst for development in the wider economy.

3.2.5 Mobile banking and mobile money services, which have already had a major impact on the economy of Kenya, are starting to make serious inroads also in West Africa, where mobile phones are ubiquitous (50%) but bank accounts are scarce (18%). New MSPs are springing up from Ghana to Nigeria and other Western African countries, offering customers in one of the poorest corners of the world the chance to send and receive money via text message for relatively small fees.

3.2.6 However, the ecosystem for mobile financial services in West Africa is different from that in Kenya, which makes it difficult to replicate the success story of Kenya. The success of the M-PESA product depends on a reliable network of agents among others. However, agent networks are too difficult to set up in West African countries, especially WAEMU countries, where retail distribution networks are not widely developed. The lack of a fully developed, fast moving consumer goods market in Burkina Faso and Mali, for example, makes mobile payment programs difficult to develop. Possible partnerships for agents are limited as are the actual agent locations themselves.

3.2.7 With adequate agent networks and other critical factors, some West African countries would have already matched Kenya's achievements. The volume of mobile payments in some West African countries is already high and its impact on macroeconomic development could be in the double digits. As a proportion of GDP, the largest recipients are Togo (10.7%), Cape Verde (9.4%), Senegal (9.3%), and The Gambia (8.2%), according to a recent World Bank/AfDB report[23]). In West Africa recipients of remittances are often low-income females without formal bank accounts.

3.3 Regulatory issues

3.3.1 With increasing use of retail agents and communications technology, bank-led and non-bank led models are converging not in branchless banking but a banking-beyond-branch arrangements. Some experts argue that technology could not replace bank staff and banks would not operate without branches in the short run, say, before 2020[24]. Operating in a banking-beyond-branch environment would require a sound regulatory framework which presently does not exist in many Asian and African countries.

3.3.2 Many Asian and African countries have issued legal acts on regulation of banking and payment systems. However, the acts have proved inadequate in:

- defining the conditions under which non-bank third-party agents can conduct cash transactions on behalf of mobile financial service (MFS) providers and possibly initiate account opening (as this would be a key driver of increased outreach under a branchless banking initiative)

22 Update on Regulation of Branchless Banking in Kenya, January 2010.http://www.cgap.org/gm/document-1.9.42400/Updated_Notes_On_Regulating_Branchless_Banking_Kenya.pdf.

23 Dilip Ratha, Sanket Monhapatra, Caglar Ozden, Sonia Plaza, William Shaw and Abebe Shimeles, 2011, Leveraging Migration for Africa, World Bank/African Development Bank.

24 Prof. Kinandu Muragu, Executive Director, Kenyan School of Monetary Studies: ***Promoting Mobile Money Development in Kenya and the region***, **2012**.

- defining less stringent 'Know Your Customer' (KYC) requirements to avoid burdensome procedures for low-value accounts and small transactions, given the low level of money-laundering-related risk

- defining e-money, protecting the funds deposited in e-money accounts and adapting legal account features (such as KYC and ceilings for account balance and transactions).

3.3.3 In India AML/CFT issues are regulated under the Prevention of Money Laundering Act 2002. The law applies to banks and financial institutions. Banks are reported to *"…have complained that know-your-customer (KYC) procedures are a challenge for many low-income customers, prompting RBI to further simplify the process for small-value accounts (maximum balance of Rs. 50,000 and maximum annual deposit of Rs. 100,000)".* Further, that, *"Under this KYC regime it is unlikely that customer identification and address verification constitute a problem for small-value transactions. However, further simplifications have been discussed, but revisions have been stalled and it's not clear when or if such proposed changes will be made"*. (CGAP Technology Program: India Focus Country 2011)

3.3.4 Under a slightly more liberalized environment, some mobile payment programs would have performed satisfactorily. There are some reasons for the different impacts of mobile payments and banking in India and African countries. There would be little hope of success if government regulations made it difficult for poor people to open bank accounts. It makes sense that if people want to initiate a banking relationship, they should not be hassled into bringing documents they do not have; and their bank should not be hassled into transporting and storing paper copies they do not need. However, there are legitimate concerns about money laundering, but all those regulatory safeguards do not need to kick in upfront when the risks are low. As some experts would argue, *"give people first an opportunity to try the service with low amounts. Let clients present documents only after certain account activity thresholds are met."* (Ignacio Mas[25], 2012)

3.3.5 There will also be little hope of success if banking regulations unnecessarily limited the range of providers who could compete effectively in the market for poor people's savings, or if regulations did not offer a level playing field across authorized providers. Financial exclusion will arise when there is too little competition at the base of the pyramid. Some experts would argue that as mobile operators are now helpfully stepping in, regulations should allow them to play but without favoring them over banks (Ignacio Mas[26], 2012). An explicit policy objective should be to increase market competition at the base of the pyramid.

3.3.6 Charkrabaty identifies some of the solutions to these challenges as follows: *"Appreciating the difficulties of banks to viably operate bank branches in every village"* in India, RBI has *"permitted banks to appoint Business Correspondents (BCs) to address this. On demand from the industry, the RBI has also permitted 'for profit' companies to be appointed as Business Correspondents".* He argues further that, *"For the price of one branch, 40 banking agents can be opened[27]"* (K. C. Chakrabarty, 2008). As a result, banks are encouraged to extend outreach to more and poorer people living far from the nearest branch, with more financial products, at lower cost, than traditional microfinance or banking channels.

3.4 Summary

3.4.1 As this section's discussion shows, facilitating financial inclusion and integration through mobile payments and banking-beyond-branch operations poses challenges for both Indian and African regulators in balancing financial institutions' outreach, the efficiency of financial services, the financial system's stability, and customer protection. To overcome these, the regulators should not focus exclusively on regulation. They should instead extend their remit to one of supervision and standard-setting, as well as information gathering, and acting as facilitating and coordinating agents. Only in this way can other low-income African countries look to replicate Kenya's financial inclusion and integration-facilitating innovations.

25 Similar thoughts can be found in his earlier papers, such as "Regulating New Banking Models that can Bring Financial Services to All", by Claire Alexandre, Ignacio Mas and Dan Radcliffe (Bill & Melinda Gates Foundation) http://www.dmcs-hosting.info/pfsprogram/sites/default/files/Regulating-New-Banking-Models-that-can-Bring-Financial-Services-to-All_0.pdf.

26 Similar thoughts can be found in his earlier papers, such as "Regulating New Banking Models that can Bring Financial Services to All" by Claire Alexandre, Ignacio Mas and Dan Radcliffe (Bill & Melinda Gates Foundation)http://www.dmcs-hosting.info/pfsprogram/sites/default/files/Regulating-New-Banking-Models-that-can-Bring-Financial-Services-to-All_0.pdf.

27 Siedek, Hannah. 2008. "Extending Financial Services with Banking Agents." Brief. Washington, D.C.: CGAP, April.

3.4.2 What is emphasized here is the role of regulation in facilitating financial inclusion and integration. For the mobile payment industry to prosper and be innovative, a sound complementary regulatory framework is required. This should provide a level, competitive playing field for all providers so that customers can exercise choice meaningfully. Other important components for such a regulatory framework include customer protection, fraud prevention, security-related and fair pricing issues.

3.4.3 This section's discussion also underscores how adopting a policy model does not guarantee the success of mobile payment programs. Other factors, such as the ecosystem, are also critical in facilitating financial inclusion and integration. This is exactly the case in Kenya. If the ecosystem lacks the critical factors, however, even the right model may be less effective than anticipated. This appears to be true in India and some West African countries.

4. Consolidation or continued innovations?

As noted earlier, adopting the right policy model may still lead to less effective mobile payment programs (in West Africa and India for example) if the environment lacks factors critical for success. Less effective programs need to be consolidated in some way. In an era of rapid technology advancement this cannot, however, exclude making mobile payment innovations for financial inclusion. Hence the debate on whether *mobile payments systems should continue to innovate or whether they should consolidate previous achievement*, considering the supply-side dynamics and their implications for mobile payments ecosystems.

4.1 Mixed performance in Africa

4.1.1 High mobile penetration is the prerequisite for financial inclusion and integration through mobile payments. In Africa, bank penetration is very low, with 61% of the population being unbanked, due to both poor quality but high costs of banking services. As a result, cash trade is dominant in most African countries. Mobile phones would provide a good platform for financial inclusion in Africa.

4.1.2 Mobile penetration rates correlate negatively with mobile tariffs. Benin and Senegal, for example, are atop the WAEMU countries except Cote d'Ivoirein mobile penetration rates with 87% and 66%, as shown in Figure 4-1, but down the table of mobile tariffs with 62 and 81 CFAs respectively, as per Table 4-1. Basic economics indicates that to raise penetration tariffs have to be reduced - especially in WAEMU countries with penetration below 50%, such as Burkina Faso and Mali.

Table 4-1:
Average mobile tariffs in six WAEMU countries in August 2011

Unit: CFA Franc

	Country	On net peak	On net off peak
1	Benin	65	62
2	Senegal	93	81
3	Togo	102	102
4	Burkina Faso	105	105
5	Cote d'Ivoire	129	128
6	Niger	133	127

Sources: Research ICT Africa. Net[28] .

4.1.3 Infrastructure should be standardized and consolidated in order to reduce mobile tariffs in the region. Standardizing infrastructure would facilitate network inter-operability, which would help to improve efficiency, streamline processes and reduce tariffs, and thereby encourage mobile penetration. Additional investment in mobile infrastructure would help remote rural households that have bypassed full landline service, especially in the land-locked West African countries, connect to mobile services.

4.1.4 In making investments in mobile payments infrastructure, most SSA governments face the challenge of insufficient demand from domestic markets that are too small. *"No fewer than 41 Sub-Saharan African (SSA) economies have a gross domestic product (GDP) of less than 30 billion US dollars, including 28 economies with a GDP of less than 10 billion US dollars*[29]*"*, (Colin McCarthy, 2010). Inadequate national demand might not qualify small economies, such as Mail and Burkina Faso in West Africa; and Burundi and Rwanda in East Africa, for commercial investment in the capital-intensive mobile payment systems, unless supported by donors or adoption of a regional approach. A regional approach will generate some benefits of scale; and is considered a possible solution.

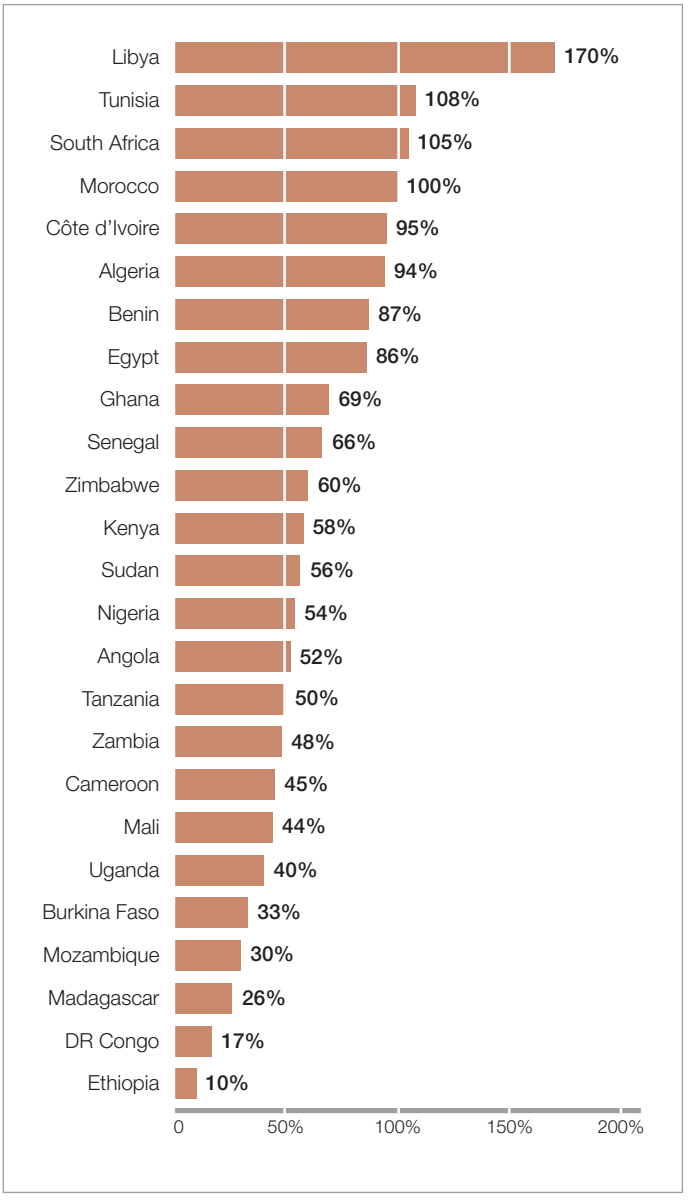
4.1.5 Once mobile telecommunications networks are installed, pre-paid services allow many more users to enter the market than flat-rate monthly contracts alone. However, two further obstacles to widespread adoption of mobile phones are the high price of handsets and, in West Africa, government monopolies on telecommunications service. Manufacturing low-cost handsets and privatization are possible solutions.

4.1.6 In the West African countries with a mobile penetration of over 50%, as per Figure 4-1, mobile communications has become an important platform for reducing the time, distance and cost for delivering information. The mobile industry has, therefore, become an enabler of economic development far beyond its immediate domain. MNOs have consolidated existing achievements, while making innovations to diversify and add value to mobile operations. Mobile value-added services have been launched throughout West Africa to enable and support agriculture, banking, education, healthcare and gender equality.

28 http://www.researchictafrica.net/fair_mobile.php

29 Colin McCarthy, 2010, Reconsidering the African regional integration paradigm.

Figure 4-1:
Mobile penetration in top 25 African countries (2010 Q4, % penetration)



Source: African Mobile Observatory 2011

4.1.7 In Niger, for example, extensive mobile-phone coverage has reduced variations in grain prices between markets, increasing profits for farmers and reducing prices for consumers. Mobile phones also make it easier for small business owners to order products and interact with customers. In these instances, mobile phones facilitate development by making it easier to exchange information. With mobile payments, phones can support economic development further by facilitating market transactions.

4.1.8 For banks, the mobile platform provides innovative ways of delivering convenient banking-beyond-branch solutions to geographically remote areas. These enable new cost structures and 'micro-services'. Mobile-based remittances, savings accounts and micro-insurance can all be offered to those at lower socio-economic levels. Micro-insurance premiums can be paid through a phone and claim settlements received into the mobile financial services account. Taking stress out of saving and regular payments creates opportunities for individuals to manage small amounts of money more effectively.

4.1.9 Since M-PESA's launch, the mobile money industry has continued to develop in many African countries. Today it has reached a level of sophistication not seen anywhere else in the world. In addition to transaction services, Africans are now able to use mobile banking platforms to access savings accounts, agriculture insurance, pensions, health insurance, microfinance loans and life insurance products. The challenge is how to consolidate and adapt non-bank platforms to provide a diversity of mobile financial services (MFS) that serve African countries' banked and unbanked populations.

4.1.10 The recent introduction of M-Kesho in Kenya (mobile penetration rate of 58%) is a first step in this direction. M-Kesho is a savings account offered by Equity Bank in collaboration with Safaricom. M-Kesho provides only electronic transaction functionality—that is, money can be transferred in and out either via the customer's M-Pesa account or an account with Equity Bank. Eventually, Equity Bank hopes to offer both credit and insurance services via this channel. West Africa is also making payment innovations. In Ghana (69% penetration), for example, the mobile network operator MTN is planning life insurance products for the low-income market.

4.1.11 With the development of mobile life insurance products, demand for mobile health (m-Health) can be created; and demand for mobile payments further enhanced. Insurance companies view m-Health as a method of collecting and

disseminating data that can increase the success of healthcare and reduce the risk of illness, while MFS allows efficient and low-cost payment to healthcare providers. Patients can move money into this savings account anytime and anywhere using their mobile phones to trigger a money transfer using mobile money transfer systems. The same account can be used to pay charges to the clinic. Healthcare providers can provide the highest quality healthcare ubiquitously. In this regard, they can leverage ICT remotely for sharing information on services and motivating patients to participate in the system through advertising new programs such as conditional cash transfers. They could also reduce the burden on administrative resources by leveraging ICT.

4.2 Indian experiences

4.2.1 In India, providing the poor with formal financial services is hard work that requires both consolidation of past progress and making new innovations. Take, for example, the case of A Little World (ALW), a boutique mobile-phone-based solution with some potential to go to scale with a basic person-to-person (P2P) service. ALW has an innovative mobile-phone-based POS that was primarily used to deliver government payments electronically in the state of Andhra Pradesh in early 2007. It is reported to have *"…partnered with 24 banks, opened over 4 million accounts, and set up over 10,000 BC locations. However, over 95 percent of the accounts and BCs are SBI's. ALW raised money in 2008, but found itself near bankruptcy by 2009. SBI came to ALW's rescue and recently approved an overall investment of $18 million, which is to be made in tranches"*, (CGAP Technology Program: India Focus Country, 2010). Though the reason for SBI's rescue is not available from the market, it might have been beyond ALW's power to work as a common agent for 24 banks. That is why ALW has narrowed its list of bank partners to just four in the SBI group and found ways *"to improve the business case, including exploring cell phones and trialing domestic remittances, especially focused on migrant workers."*[30]

4.2.2 It is also true of other unsuccessful mobile payment programs in India. To recover, grow and prosper, they also need to be consolidated and upgraded, while making innovations. As noted above, India is a middle-income developing country with a relatively sophisticated financial sector. Mobile financial services have to be diversified for both banked and unbanked customers. It is also apt to note that provision of remittance is an additive banking service in India. It serves the banked population for diversity and convenience and serves the unbanked Indians for accessibility of payment services. For the unbanked Indian, offering only remittance services is rarely sufficient, and expanding the product suite to offer other services and products is essential. Providers need to look beyond remittances both to drive profitability of mobile money systems and to cater to the considerable unmet financial needs of the unbanked and under-served masses.

4.2.3 It would be a mistake to assume that clients are homogenous in diversifying affordable financial products in India. Getting the product range right requires listening to both banked and unbanked clients carefully and matching their needs with the organization's capabilities. Broadening the product range enables a mobile money platform to expand its client base, drive up the number of transactions on the system and ultimately reap the benefits of a vast opportunity. However, providing quality products and services for both banked and unbanked customers requires banks to operate beyond branches through a large reliable network of non-exclusive agents whose role is to provide 'last-mile' delivery of mobile financial services.

4.2.4 To be successful in this direction, banks have to reduce costs to the levels acceptable to the unbanked population. In this regard, mobile financial services are not going to succeed without their providers moving to a radically lower cost model. That means escaping the fixed cost of branch networks with limited reach and offering customers mechanisms to access banking services beyond their own branches. It also means building much more scalable transactional platforms that are shared across multiple providers. There is a mass of transactions at the base of the pyramid, and providers wanting to tap into that will need to play an interoperable game.

4.2.5 Mobile financial services would not succeed if their providers did not have sufficient confidence that extending service to the poor would be profitable. To be successful, banks need to understand customer needs in a much more segmented way and move beyond branch-network models to scalable transactional platforms shared across multiple providers, offering customers the mechanisms to access banking services beyond their own branches. In this way, a bank-led mobile payment model also presents unique opportunities for financial inclusion and integration.

30 http://www.cgap.org/gm/document-1.9.50919/CGAP_Technology_Program_Country_Note_India_Rev.pdf.

4.2.6 There are a number of pro-poor mobile banking innovations in India. YES SAHAJ, for example, is said to be among the more popular ones. It is an ultra-low cost mobile banking kit of YES BANK developed in the context of the bank's endeavors of *Frugal Innovation for Financial Inclusion (FI4FI)*, (Surendra Shetty, 2012). FI4FI, which is primarily oriented at the financially excluded population for cash withdrawal, loan repayment, and a provides an option to make deposits in India, and also provides a low cost but highly secured banking solution with real time tracking of transactions and SMS alerts. Due to its special contribution, FI4FI has won a number of awards for innovative banking in India.

4.2.7 However, YES SAHAJ is only one of the success stories in India. Due to strategic collaboration between banks and nonbank institutions, there are many other success stories of mobile banking in India. These partnerships have enabled not only financial inclusion but made less literate people mobile banking-savvy. The key to their success is a cheap but secured solution to financial exclusion. To be profitable and sustainable as well, banks have to adapt to transaction-based demands with a new strategy. Cross and upstream selling, for example, may enable banks to make profits, while also facilitating financial inclusion. Banks have to find a secure solution by:(1) helping agents select an appropriate technology platform; (2) proving incentives to agents to hold appropriate levels of liquidity at all times; (3) requesting agents to undertake due diligence with guidelines; and (4) ensuring that they are informed of mobile payment operations by electronic audits.

4.3 Convergence tendency

4.3.1 With the consolidation of the existing mobile payment programs and the emergence of new payment innovations in India and Africa, bank-led and non-bank-led models are converging to a banking-beyond-branch arrangement that permits banks to delegate 'last-mile' cash management and customer servicing functions to third-party retail outlets. By making basic deposit, withdrawal, and payment functions available securely through retail shops in every village and neighborhood, banks, MNOs and technology firms will drastically increase their physical footprints in and beyond borders, transform the basic economics of low-balance savings for the unbanked population, and reach their objectives of financial inclusion and integration in both India and Africa.

4.3.2 To facilitate the achievement of these objectives, regulations need to be adapted to these new possibilities of banking beyond branches. They should strike a balance between encouraging financial innovation, supporting competition and protecting customers. Regulations need to be adapted, firstly, to permit banks to engage third-party retail outlets with minimal financial risks for both banks and their customers; secondly, to help customers understand and draw on their rights in a more complex service delivery chain; thirdly, to permit immediate account opening for the unbanked with a progressive tightening of KYC as their use of financial services grows; and fourthly, to create a regulatory space for more financial innovations.

4.4 Summary

This section's discussion underlines that, in addition to sound regulation, other factors play an important role in facilitating financial inclusion and integration through mobile payment development. These include sufficient investments in ICT infrastructure to facilitate mobile coverage and penetration. In some cases, privatization of state-owned telecommunication companies will be required to promote competition and efficiency, which should lead to reduced tariffs for mobile users. Supported by wider mobile coverage, banks and MNOs should be able to forge win-win partnerships that will deepen financial inclusion through diversification of financial products (such as the Kenyan case, from M-PESA to M-Kesho). Sound regulation, investment in 'hard' and 'soft' infrastructure, and partnerships between banks and MNOs are critical success factors. However, they will not facilitate financial inclusion and integration as effectively as intended in the absence of other critical success factors such as inter-operability, technological adaptation and use, adequate network of distributors and appropriate use of technology, as outlined in the next section.

5. Sound ecosystem for sustainable mobile payment programs

The ecosystem for mobile payments consists of the processes and systems that link and facilitate or control the delivery of payments systems. It involves more than collaboration between suppliers and their customers under the guidance of regulators in a particular country. It also includes technology firms, retailers and other stakeholders. Given the multiplicity of stakeholders, their different motivations and the unique technological issues involved, mobile payment services can develop sustainably only in a sound ecosystem in which MNOs, banks, card issuers, agents, consumers, regulators and governments all contribute to a win-win situation where mobile money services take root, proliferate and go to scale. This chapter presents ecosystem issues based both on topical dimensions (inter-operability and roles of technology and various service providers) and regional contexts and discusses related Indian and African experiences and lessons.

5.1 Interoperability issues

5.1.1 Due to the existence of multiple service providers and their agents as well as different technologies, interoperability issues naturally appear in mobile payment and banking-beyond-branch arrangements. Mobile payments or m-payments are based on information exchange between a bank and its customers for financial transactions through the use of mobile phones. Mobile payments involve debit/credit to a customer's account on the basis of fund transfer instruction received over the mobile phones. On that score, interoperability roughly *"…means that the mobile payment providers, financial institutions and network operators need to use open standards for interaction with each other."* (MPFI[31], 2010)

5.1.2 In India and Africa, the lack of inter-operability is regarded as one of the constraints to mass applications of mobile payment services. There is an emerging call for inter-operability among: (1) technology platforms, (2) agents and (3) mobile payment products. Governments are struggling to understand a regulatory approach that can balance the interest of customers with those of MFS providers. However, it is too difficult to do it now. Some MFS providers recognize this dilemma, yet still possess a tunnel vision for maintaining enough uniqueness to maintain their own profitability. Others will not do it until they recoup the substantial investments they have made into developing services and related infrastructure.

5.1.3 As a result, few African countries have even attempted to resolve the issue. Ghana in 2008 may have been the continent's first government to issue Branchless Banking Guidelines with regulations on non-exclusive agents. The regulation aims at maximum connectivity, competition and outreach, under which all banks and telcos should be able to accommodate each other's customers. However, the performance in practice is below expectations. *"Despite more than 3 million registered customers, the number of active customers is much less, due partially to issues within the MNO-bank partnerships as well as a combination of operational challenges around building a viable agent network, effective marketing and robust technology"*[32] (Claudia McKay, 2011).

5.1.4 To increase activations, the Central Bank of Ghana is pushing its own inter-operable card and POS solution. But operational challenges around building a viable agent network remain substantial. Around the world, banks and MNOs are forming often uneasy alliances, acknowledging that each needs the other but struggling to bring two very different cultures together. In Ghana, these dynamics are exacerbated as each MNO is working with multiple banks. Not only can there be disagreement between the MNO and banks on roles and responsibilities (and corresponding remuneration) but banks are asked to invest in a service that will also directly benefit their competitors.

5.1.5 India is also tackling inter-operability issues, but with a high technology approach. Inter-operability at the agent level is part of the Unique Identification Authority of India's vision of financial inclusion. The authority has begun to roll out registration of unique 'Aadhaar' identification numbers with matching biometrics[33]. This will serve as a proof of identity and address anywhere in India. As it becomes more widely available, it could ease KYC processes and reduce friction around mass banking-beyond-branch operations.

5.1.6 The long-term goal of India's mobile banking framework is to enable real-time fund transfers from an account in one bank to any other account in the same or any other

31 http://www.mpf.org.in/pdf/MPFI_Interop_Std_V1.A.pdf

32 Claudia McKay, 2011, Ghana Aiming for Interoperability in Branchless Banking, CGAP, http://technology.cgap.org/2011/06/16/ghana-aiming-for-interoperability-in-branchless-banking/.

33 Aadhaar is a 12-digit individual identification number that the authority issues on behalf of the government.

bank irrespective of the customer's mobile network. This requires inter-operability between mobile banking service providers and banks and the development of a host of message formats. To ensure inter-operability between banks and between their mobile banking service providers, Indian banks will adopt message formats like ISO 8583 with suitable modifications. To meet the objective of a nationwide mobile banking framework, facilitating inter-bank settlement, India has set up the India Mobile Payment System (IMPS).

5.2 Roles of technology firms

5.2.1 Since inter-operability issues are proving too difficult to resolve for the time being, Indian MPS providers have tended to play an important role in facilitating financial inclusion through mobile payment programs (*web PC, POS terminal, mobile USSD*[34], *mobile SMS, Voice/IVR*[35]) for last-mile delivery of customer services, as per Table 5-1. However, the approach chosen is also determined by the consumers' preferences.

5.2.2 The lessons learnt on the ground so far show that there may be no perfect delivery channel that can satisfy all types of customers. Digital payment is preferred by e-commerce players, but not those who are unwilling to pay higher costs for cash-card based payments. E-commerce is popular on account of "cash on delivery", but players also view this as a huge cost burden. Moreover, e-customers want assisted services, service fulfillment, and physical proof of e-transactions.

5.2.3 Reaching the last mile is a huge logistical challenge especially given the facts that 91% of payments are made in cash and India's digitally and financially-excluded population is high. For effective last-mile delivery, a solution should be available, accessible, affordable and acceptable to the unbanked population. In India, e-commerce is still in its early days; and mobile commerce (m-commerce) is yet to take off.

5.3 MNOs in the mobile payments ecosystem

5.3.1 The role of MNOs varies. They play an assisting role in bank-led models, but a leading role in nonbank-led banks. Since India has adopted a bank-led model, MNOs have been asked to play an assisting role. They are prohibited from issuing stand-alone e-money services. While a restriction on for-profit MNO BCs has been lifted (September 2010) and many MNOs are looking for arrangements with banks, they still have limited scope to drive the banking-beyond-branch business.

Table 5-1:
Technology options for customer services delivery in retail banking

(Share of broad money in GDP

	Web PC client	Mobile client	Mobile SMS	Mobile USSD	POS terminal	Voice/IVR
Cost/Capex	High	Moderate	Low	Low	Moderate	Low
User friendly	High	High	Moderate	High	High	Moderate
Application development	Easy	Complex	Moderate	Moderate	Complex	Moderate
Application versatility	High	Moderate	Low	Moderate	Moderate	Low
Retail set	Moderate	High	Moderate	Moderate	Low	Moderate
Language	English	Multi	English	English	English	Multi
Maintenance	High	Low	Low	Low	Moderate	Low
Service delivery reliability	High	Moderate	Moderate/low	Moderate/low	High	Moderate
Overall retail comfort	High	Moderate	Low	Moderate/low	High	Low

Source: Sunil Kulkarni, 2012

34 Unstructured Supplementary Service Data (USSD) is a protocol used by GSM cellular telephones to communicate with the service provider's computers. USSD can be used for WAP browsing, prepaid callback service, mobile-money services, location-based content services, menu-based information services, and as part of configuring the phone on the network.

35 Interactive voice response (IVR) is a technology that allows a computer to interact with humans through the use of voice and DTMF tones input via keypad.

Table 5-2:
India inactive/registered mobile connections by operator, Q2 2011 (million)

(Share of broad money in GDP

	Total	Market share	Inactive	Active	Inactive rate
Cheers Mobile (Etisalat DB)	2.3	0.2%	0.9	1.4	65%
Ping Mobile	2.3	0.2%	0.9	1.4	61%
Loop Mobile	5	0.5%	1.8	3.2	58%
S Tel	5.3	0.5%	2	3.3	61%
MTNL	9.1	0.8%	3.6	5.5	65%
Videocon Mobile	11.6	1.1%	4.5	7.1	64%
MTS	17.7	1.6%	6	11.7	51%
Uninor (Unitech Wireless) 2	31.2	2.8%	4.9	26.3	19%
Aircel (Maxis)	84.7	7.7%	26.7	58	46%
Idea Cellular	102.3	9.3%	7.2	95.1	8%
BSNL	134.7	12.3%	42.9	91.8	47%
Tata Teleservices	138.3	12.6%	47.3	91	52%
Vodafone Essar	168.6	15.3%	27.1	141.5	19%
Airtel (BhartiAirtel)	188.2	17.1%	19	169.2	11%
Reliance Communications	197.8	18.0%	54.5	143.3	38%
	1,099.1	100%	**249.3**	**849.8**	29%

Source: Wireless Intelligence, Telecoms Regulatory Authority of India (TRAI)

5.3.2 Kenya's mobile payment market is dominated by Safaricom. However, there are reported to be 15 mobile network operators (MNOs) in India, with no dominant player. As a result, the Indian mobile payment market is shared among the top six MNOs (85%, as per Table 5-2). Reliance tops the overall ranking of active and inactive connections with 18%, while Airtel is first on active connections. Vodafone Essar is also strongly positioned with a 15.3% market share. A high inactivation rate of 29% reveals heated competition among the MNOs. The delivery of voice and text services is reported to have reached a state of intense competition, with prices having been competed down to rock bottom levels. However, there are other reasons for poor banking and mobile payments services in India. For the banked population, low usage of payment instruments arises mainly from lack of adequate merchant outlets and a tax-avoiding culture. For the unbanked population, it may result from lack of adequate KYC documents, low perceived need for banking, and high costs.

5.3.3 Despite the current challenges, diversified MFS may offer a way out. It is said that mobile banking will help drive the transformation of the payments landscape, accounting for a growing share of non-cash payments in the future. With innovation occurring on multiple fronts, the outreach of mobile infrastructure coupled with the appeal of smart phones should help ensure that mobile services meet a wide range of customer needs. Technology cycles are shortening as payment solutions emerge where they can add value, either directly for end-users or as an intermediary elsewhere along the value chain.

5.3.4 As MNOs in India diversify their mobile services, they also find the need to forge partnerships with banks to offer various financial products, including savings accounts, prepaid instruments and credit products. The partnerships are expected to bring the un-banked and under-banked populations into the organized financial services framework and assist in furthering the electronic payments market in India.

Indo-African mobile payments investments: Airtel investments and operations in Africa

Bharti Airtel (BA) is the largest technology company in India, which offers mobile voice and data services, fixed line, high speed broadband, turnkey telecom solutions for enterprises and national and international long distance services to carriers. The vision of BA is making mobile communications affordable for all to give people the freedom to meet their daily challenges and to drive economic and social development.

Guided by this vision, BA has expanded its operation across borders to other low-income developing countries. Followed by its successful cross-border operations in Bangladesh and Sri Lanka, BA acquired Zain Group's ("Zain") African mobile operations in fifteen Sub Saharan African countries with USD10.7 billion in June, 2010.

The countries in which BT has acquired the operations are - Burkina Faso, Chad, Congo Brazzaville, Democratic Republic of Congo, Gabon, Ghana, Kenya, Madagascar, Malawi, Niger, Nigeria, Sierra Leone, Tanzania, Uganda, and Zambia. Zain is the market leader in ten of the fifteen countries and second in 4 countries.

This acquisition is the largest ever cross-border deal in emerging markets and expected to result in combined revenues of over USD 12.4 billion. Due to this acquisition, BA operations cover: (1) a total customer base of over 42 million; and (2) have a market potential of over-450- million population with telecom penetration of approximately 32%.

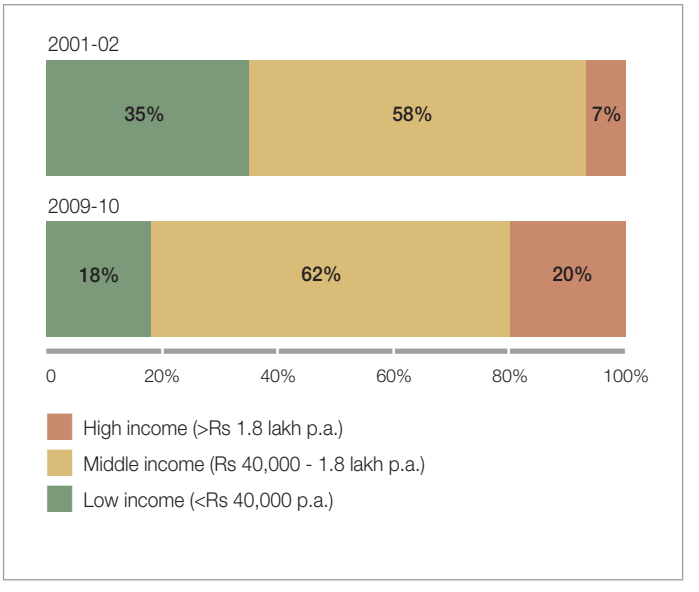
Encouraged by the success of the acquisition, BA has expanded its African operations to Seychelles and Rwanda. BA is now among the five largest mobile operators in the world, and making a positive impact in the communities in which it operates: through (1) extending its networks to rural areas, (2) conducting mobile money services and (3) promoting its education initiatives.

Sources: Airtel (http://www.airtel.com) and Wikipedia (http://en.wikipedia.org/wiki/Zain)

5.4 Banks in the mobile financial services ecosystem

5.4.1 While cash economy is growing in both SSA and India, only a small fraction of financial flows are facilitated electronically. All the current non-cash payment modes—credit cards, debit cards, multiple mobile payment solutions— appeal to only a small section of the ecosystem. While the ubiquitous mobile appears the most promising channel, the most pressing current need is to develop an innovative mobile payments system customized to national and regional requirements and with mass appeal. Against this backdrop, Indian technology firms, m-commerce firms, MNOs and banks have seen the need to form win-win partnerships to address the huge potential MFS market. To take advantage of this opportunity, they need to invest substantially in payment platforms. Successful operations, in turn, will require scale, open standards and inter-operability. Mobile phone is one of the terminals which allow massive distribution – cash terminal/ e-wallet/card.

Figure 5-1:
Distribution of Indian households (based on annual household incomes)



Source: NCAER

Table 5-3:
Key Indicators of Key[36] Indian Banking Players (close to 60% market share) for the period of 2011

(Share of broad money in GDP)

	Credit assets (Rs. bn)	Market share	Net interest margin	Tier-1 capital	ROE	ROA
State Bank of India	7,567	18%	2.9%	7.8%	13%	3.3%
Punjab National Bank	2,421	6%	3.5%	8.4%	24%	1.8%
Bank of Baroda	2,287	5%	2.8%	10%	245	1.4%
ICICI Bank	2,146	5%	2.3%	13.2%	105	4.5%
Bank of India	2,131	5%	2.5%	8.3%	17%	2.2%
Canara Bank	2,125	5%	2.6%	10.9%	26%	1.5%
HDFC Bank	1,600	4%	4.2%	12.2%	17%	1.1%
IDBI Bank	1,571	4%	1.8%	8.1%	16%	1.8%
Axis Bank	1,424	3%	3.1%	9.4%	195	1.1%
Central Bank of India	1,297	3%	2.7%	6.4%	16%	2.2%
Total banking sector	42,874	100%	2.9%	9.7%	17%	2.3%

Data Source: ICRA Research 2011[37]

5.4.2 The bank-led full financial inclusion model, however, poses dual challenges for Indian banks. At one end of the spectrum lies the demand to achieve financial inclusion as nearly 45% of the population is yet to be covered by the formal banking system. At the other end lies the task of meeting the needs of existing customers. A few banks are reported to regard financial inclusion "*as a corporate social responsibility rather than as a business opportunity"* and to have "found it difficult to build successful partnerships with MNOs" in banking-beyond-branch operations (Chen and Breloff, 2010).

5.4.3 To help develop banking-beyond-branch operations, the Indian government has launched government to person (G2P) payment schemes to provide unbanked beneficiaries access to financial services by channeling a consistent flow of money into financial accounts. Banking beyond branches is one way of making such payments and services more accessible while at the same time cutting the cost and increasing the efficiency of the payment process. Although this is a concept whose potential has been studied for a long time, only a few countries have experimented with making the link between government payments and bank accounts. Even fewer are doing it on a large scale. However, India regards it as a strategic partnership between government and banks.

5.5 Reengineering banks with core banking solutions for a win-win partnership

5.5.1 Government support may help MFS providers improve their performances in facilitating financial inclusion. However, sustainable operations require them to transform their business models. In bank-led models, banks should transform their traditional bricks-and-mortar model to a new banking-beyond-branch model with a CRM-based core banking solution. This can help them select and reach target customers through the right channels, understand customers' value, optimize service quality, and 'sense and respond' to customers' needs through appropriate cross and up-selling alongside re-selling opportunities.

5.5.2 The CRM-based core banking solution must be technology-based, market-driven and customer protection-oriented. Using technology as an enabler of financial services, banks ought to re-engineer their business processes, linking front-end transactions (via handheld devices, mobiles, cards, micro-ATMs, branches, kiosks and other channels) seamlessly with back offices' CRM-based core banking solution. Sound regulation of banking-beyond-branch operations requires banks to operate beyond branches rather than without branches. Issues arise over matters like supervision of banks' agents and redressing customer grievance. Some accounting issues also need to be addressed in this area.

36 The top10 Indian banks accounted for a significant 57% share of the total credit as on March 31, 2011.

37 http://www.icra.in/Files/ticker/Banking%20note-final.pdf.

5.5.3 All these operational issues and many more can be resolved if banks begin to look at financial inclusion as a business opportunity rather than a corporate social responsibility (CSR) obligation. This can be brought about through analytics, which can enable optimized performance, informed decisions, actionable insights and trusted information. By bringing together all of their organization's relevant information, banks can make significant use of analytics for business intelligence. This may encompass both simple querying and reporting mechanisms, financial performance and strategy management, and advanced analytics, including data mining, predictive modeling and 'what if' simulations. Banks may also undertake 'sentiment analysis' to better understand their customer data and understand perceptions about their brand, products and services. This may identify problems of customer experience to be resolved so that they can act more efficiently and effectively.

5.5.4 Ghana's initiative to regulate non-exclusive agents has merit, but raises the issue of whether there is a win-win partnership between banks and non-bank agents. Banks have to realize that the BCs who are the first level of contact for customers on their behalf have to be compensated adequately if this model is to succeed. Otherwise, as has been seen in Ghana, BCs will not regard agency as a business opportunity and support it. Accordingly, promoting competition among banks, agents and IT solution providers necessitates devising win-win strategies and demanding that the banking industry develop robust next-generation architecture to enable customer-centric IT. In this way competition should be a game-changer.

5.5.5 The adoption of Aadhaar in African countries could have the potential to be a major game-changer too as it would transform the management of citizens' identity into a digital mode. Customer acquisition and service provision could improve dramatically. Banks would need to build new systems around Aadhaar architecture to deliver full range of financial services, deploy the available analytics, collect real-time data via multi-layered detection technologies, and enhance protection of customers through technology as well. KYC requirements may also ease.

5.6 Overall developments in SSA and Asia

5.6.1 With the development of banking-beyond-office arrangements, technology firms and banks have been motivated to extend their services into rural areas and across borders by developing technology and agent systems that are low cost, meet regulatory requirements, and can quickly extend services with new accounts opened. However, progress and challenges vary across the different regions.

5.6.2 The mobile payments system is making progress in a number of African countries. As noted above, in Kenya, for example, where this product was first launched as M-PESA in 2007, much progress has been made, and M-PESA can be cited as an exemplary financial innovation, with the characteristics of: (1) mobile-based SIM platform for communicating with agents across Kenya; (2) a strong partnership with Equity Bank for domestic transfers, and Citigroup and Western Union for international remittances; and (3) a simple messaging procedure for both the banked and the unbanked to transfer money within Kenya. The main factors behind Kenya's success with mobile payments include: the rapid development of ICT infrastructure in East Africa (international fiber optic cable links and the establishment of digital villages for instance), which has made outreach of mobile payment services possible and has enabled a tremendous growth in the number of mobile money providers and customers; the adoption of appropriate regulatory framework, which has helped to reduce the cost and improve efficiencies; and the proper development of legal framework for mobile money development.

5.6.3 Following Kenya's lead, non-bank mobile payments systems have been successfully introduced in several other African countries, including Ghana, Uganda, Rwanda, Cote d'Ivoire, and Benin. Other trials are reported[38] also under way in Nigeria, Congo Brazzaville, Guinea Bissau, Guinea Conakry and Liberia. Mobile penetration has outstripped banking penetration in many SSA countries. However, in many of these countries, mobile payments face a number of challenges, including prevalence of (1) different ecosystems in which governments, regulators, banks, MNOs, MSP providers, and technology firms interact with a plethora of interests, motivations, strategies, tactics, and business models; (2) different regulatory environments where understanding and skills acquired in one market are difficult to be replicated

38 http://www.icra.in/Files/ticker/Banking%20note-final.pdf.

to another market; and (3) different requirements for banking and mobile services in terms of technology platforms and applications. Nevertheless, in some countries such as Uganda progress is being registered. The catalyst for growth in these countries is largely a result of: (1) strong distribution network and organization; (2) effective management of ecosystem; (3) clear and simple value proposition; (4) strong viral marketing effect; (5) secured and reliable product; and (6) clear focus on the unbanked population.

5.6.4 The WAEMU provides an example of regional efforts. Most WAEMU member countries have launched mobile payment programs. The union enjoys a high mobile phone penetration rate of over 50%, which offers the region favorable conditions for facilitating financial inclusion through mobile payment programs. Indeed, extension of financial outreach to rural areas and promotion of cross-border financial flows across borders through mobile channels and with diversified products is one of the basic objectives of the mobile payments initiatives in the region. Yet, there are many challenges to banking-beyond-branch operations and cross-border mobile remittances in the WAEMU. In addition to commercial banks' lacking in retail banking expertise (CGAP Country Note on WAEMU, 2011), there is the challenge of inadequate agent network in many of these economies. Most WAEMU countries have a very low concentration of payout locations in rural areas, with an average rural payout ratio of 36 percent — the regulation allows only banks and authorized foreign exchange bureaus to be the paying agent of remittances. The money transfer operators (MTOs) often impose exclusivity clauses on banks and limit price competition. Indeed, the cost of sending money in the WAEMU is also prohibitive. Sending a remittance from France to Senegal or Mali, for example, is easily 10 percent of the amount sent, with regional remittances often being even more expensive. Even so, most WAEM commercial banks have failed to meet the needs for cross-border mobile transfers. In addition to setting up regional teams of agents and building up banking-beyond-branch expertise through capacity building exercises, the banks need to reengineer business processes and market themselves to create widespread awareness that they could offer a competitive alternative for unbanked or under-banked customers. The WAEMU would also benefit greatly from a convenient and interoperable solution that offers seamless remittances and is aligned with the regulations of the various countries.

5.6.5 In Asia, mobile payment and mobile banking have been developing fast, albeit with varying applications in the developed and developing Asian countries due to different ecosystems as well as levels of income per capita and financial sector development. In the developed Asian economies (Japan and South Korea), mobile payments benefit from the adoption of digital technologies. Since the majority of the population in the developed economies have bank accounts, the value of mobile payments lie in the potential for greater convenience, real-time, financial control and access to coupon and loyalty programs; and M-wallets are used for transit, parking and merchant payment via near field contactless communication (NFC) technology. In middle-income developing Asian countries (China, India and Indonesia), mobile payments and mobile banking services are relatively less developed, but show a rapid increase from m-remittance and m-payment to e-and m-ticketing. In the low-income economies, Bangladesh for example, mobile payments offer high potential for leap-frogging traditional payments infrastructure due to lower cost of mobile payments service. MNOs in these countries are, therefore, collaborating with banks in launching domestic and cross-border mobile wallet programs in some markets; and P2P, bill payments and additional services in other markets. The lessons from Asia, however, confirm that strong domestic ecosystems should be in place before launching international remittances. A significant domestic ecosystem will allow users that eventually receive international remittances to conduct many "downstream" activities such as paying bills, domestic transfers and savings. In addition, adequate customer education should be conducted on both receiving and sending ends to enhance awareness and market the benefits and uses of mobile payments. Simple products should also be introduced before sophisticated offerings in order for customers to adapt sophisticated products more easily. Cross-border mobile payments and mobile banking also confront regulators with challenges arising from money laundering, financing terrorism, and fraud. There is, therefore, a need to develop a sound ecosystem, where the distributors, billers and participants need to participate in appropriate KYC procedures. In the area of m-wallet, there are also concerns related creation of e-money and the protection of m-wallet funds, especially in case of MNO liquidation.

Figure 5-2:
All the main stakeholders for mobile payment services

5.7 Summary

The review of major mobile payment programs in SSA and Asia seem to indicate that it is not only a question of models but also of ecosystems that decide the performance of mobile payment programs. In addition to sound regulation, adequate investment in 'hard' and 'soft' mobile infrastructure, partnerships between banks and MNOs, a favorable ecosystem will include (1) an inter-operable technology platform for the main categories of financial product, customers and agents; (2) an adequate network of distributors for both e-commerce and last-mile delivery of MFS; (3) a CRM-based core banking systems for both banked and unbanked customers; (4) a win-win partnership between technology firms, MNOs, banks and customers. Figure 5-1 shows an ecosystem with all the main stakeholders and a supportive regulatory and government environment. Beyond the ecosystems, bank-led models tend to be more suitable to mid-income countries (such as South Africa and India) with relatively mature financial sectors; non-bank-led model can be successful in low-income countries (such as Kenya and Uganda) with under-developed financial markets. Financial inclusion is a deepening process, which often starts from payment to other financial services. Banks and MNOs, therefore, need to form partnerships in facilitating financial inclusion. Experience shows that some mobile payment programs, remittances in particular in West Africa, have been less successful than planned due to lack of critical success factors (insufficient distribution network and agent exclusivity, for example). However, in East Africa, the use of agent networks has played a pivotal role in the Kenyan success.

6. Regulating cross-border mobile payment programs

Cross-border mobile transfers present a number of regulatory issues, reflecting the need to promote competition while paying attention to risks associated with money laundering, terrorist financing and fraud, especially in the context of fast changing mobile technologies, growing cross-border remittances and inadequate cooperation between regulators both across sectors and borders. The regulatory framework should, therefore, match the landscape for the transfers.

6.1 Global landscape for cross-border transfers

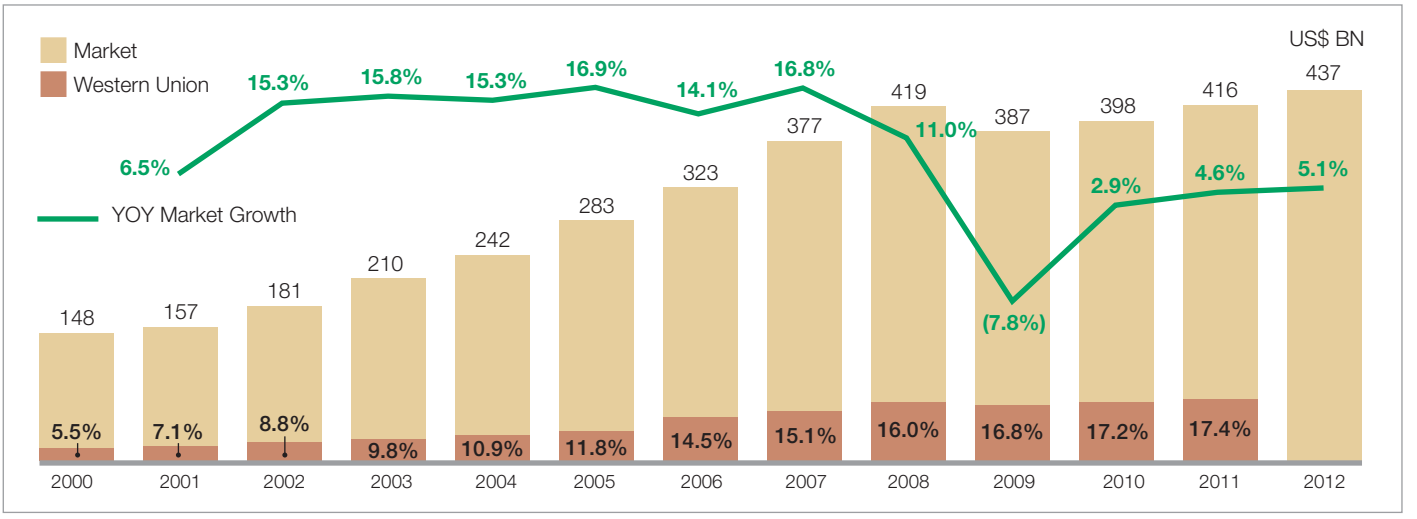
6.1.1 In SSA, cross-border transfer markets remain relatively underdeveloped in their financial infrastructure and regulatory environment, but the rapid adoption of mobile technologies is transforming the landscape. The continent has the highest remittance costs among developing regions, due partly to a lack of competition on the supply side. A large share of international remittances to Africa is channeled through a few large international money transfer agencies, which often work in exclusive partnership with African banks and post offices.

6.1.2 Western Union is among the major players in the remittance markets and serves 16,000 send-and-receive corridors around the world[39]. Due to extensive partnership with banks and post offices worldwide, West Union is said to dominate cash-to-cash transfer markets regionally and globally.

6.1.3 Global money transfer industry is a big market with the traditional core cross-border remittances amounting to about US$ 416 billion annually, as per Figure 7-1, and with opportunity revenue of US$23 billion (*about 1.5% of the revenue base of the global telecom industry*). However, telecom firms' interest in the sector is limited. This is partly due to high transfer costs, especially in SSA, as per Table 6-4-1 and Figure 2; partly to consumers' strong preference for dealing in cash; and partly due to regulatory challenges. Partnership with an existing money transfer operator would probably be more attractive than launching new stand-alone operations as it could be achieved with a much lower investment.

6.1.4 Due to market and regulatory constraints, few corridors use mobile phones as part of the cross-border transfer process. Mobile payment and beyond-branch banking have made little material impact on Western Union's business. Only a pure mobile-to-mobile option available globally would represent a meaningful threat to Western Union's business model, as hybrid methods (mobile-to-cash, for instance) still require a physical agent at one end or the other and keep Western Union's traditional advantages in place. If widely adopted in a sound ecosystem, mobile-to-mobile money transfers would enhance market competition, reduce cross-border transfer costs for both the banked and unbanked populations and change the mobile payment industry's dynamics as they would eliminate the need for physical agent networks and remove a barrier to entry.

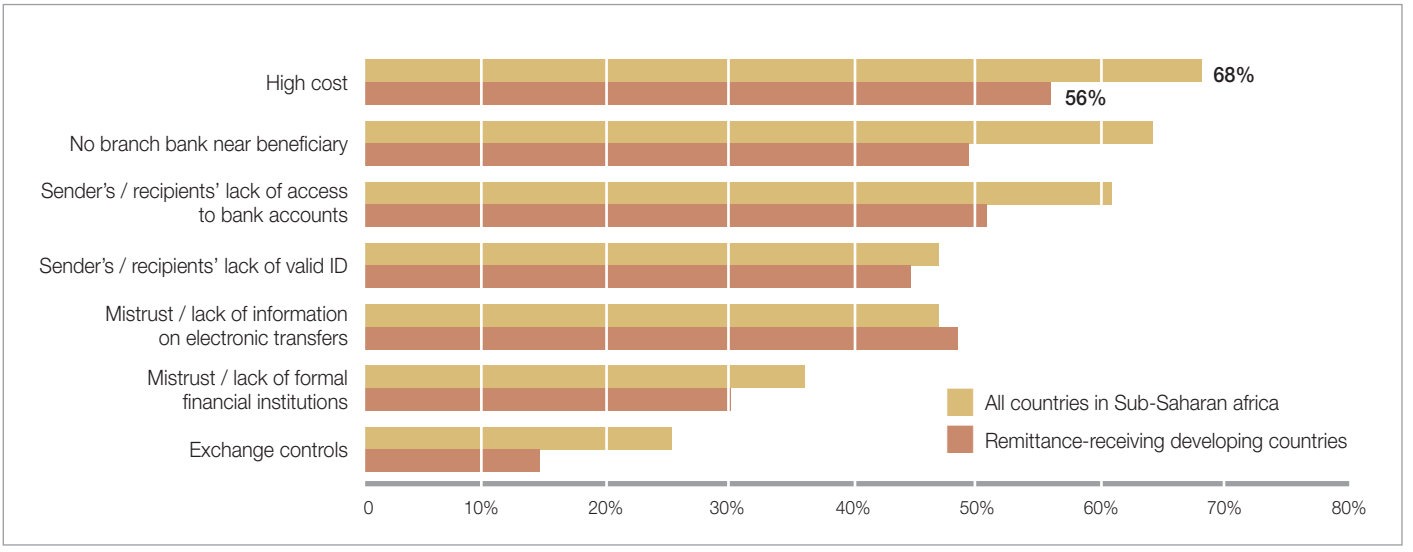
Figure 6-1:
The Global Remittance Market 2000-2012



Source: Mr. Kiran Shetty, 2012

39 http://finance.yahoo.com/news/mobile-phones-western-union-obsolete-110000055.html.

Figure 6-2:
Factors inhibiting the use of formal remittance channels in developing countries



Source: Irving, Mohapatra, and Ratha 2010

6.2 Legal and regulatory framework for cross-border mobile transfers

6.2.1 Cross-border mobile payment regulation is more complex than domestic one. The issues related to the latter include, among others: (1) allocation of regulatory responsibilities between central banks and telecom authorities; (2) entry restrictions (adoption of models); (3) funds' safeguarding (e-money issue, liquidity, restriction to uses, diversification of e-float holdings), (4) fund isolation, (5) e-money platform as savings products; and (6) competition. The issues related to the former, also include regional standards of innovations.

6.2.2 Mobile payment schemes are typically national in approach in most parts of Africa but the case of WAEMU, where transfers are taking place across the region, provides insight into what cross-border regulation of mobile payments would involve. In contrast to many other African regions, regulation in the WAEMU, developed at regional level by BCEAO, is applicable both on regional and national levels. This includes regulation of banks, microfinance, and beyond-branch banking programs as well as the related accounting frameworks, among other things. However, since the WAEMU is a Monetary Union, regulation of cross-border mobile payments is conducted within the context of WAEMU's financial integration. In March 1999, BCEAO, the central bank for the WAEMU region, initiated a program to modernize the payment systems across the member countries for the purpose of strengthening the regional financial systems, encouraging financial innovations, promoting economic integration, and facilitating financial inclusion of the unbanked population within the monetary union. Backed by the regional payment system, mobile financial services have made progress in some of the WAEMU countries; and BCEAO has put the development of mobile financial services as priority.

6.2.3 BCEAO has adopted an open regulatory framework that allows bank and non-bank-led models for mobile money services. However, MNOs in the WAEMU have not opted for the license to issue electronic money (e-money). Instead they have developed partnership with banks as technology providers. While the BCEAO has issued new regulations to clarify issue of electronic money, overall, it remains an open regulator, eager to adapt best practices and exchange ideas. The current relatively permissive environment across the region makes it an attractive area for mobile payment and mobile banking programs. However, looking forward, there are a few areas that the region should tackle for improvement.

In particular:

- sustainable development of mobile payments and transfers services in and beyond the WAEMU countries would require setting up a prudential regulatory framework through which both telecommunications authorities and central banks will engage in a collaborative dialogue to balance intervention for risk mitigation with market innovation

- with technological advancement, the regulatory landscape is likely to evolve and to differ from country to country and by business model. As a result, it will be important for telecommunications and financial regulators to coordinate a risk-based approach to understand risks in mobile money payment and transfer services and establish mobile money and payment regulation supervision; and

- policy and regulation in the WAEMU region will need to consider shared infrastructures that work harmoniously to address emerging risks in retail payments and fees reduction issue while recognizing the benefits of innovation and increased financial inclusion.

In line with international financial standards, SSA regulators are expected to adopt risk-based and technological neutral regulatory frameworks. In this regard, providing mobile financial services at same levels of risk requires same degrees of regulation, no matter whether they are banks, MNOs and any other payment providers. Mobile payment needs to be subject to a lighter regulation, since they are less risky than mobile saving and lending. In other words, MNOs need not be regulated like banks as long as they confine their operations to mobile payments.

6.2.4 In the absence of regulations which are required to mitigate risks in the mobile banking environment, mobile operators and financial institutions should work closely in introducing risk mitigation measures, which include, among others, 'know your customer' strategy; ceilings on the amount of money that a customer can transact daily; audit trails to track all transactions to protect customers against any loss; and insurance cover for mobile service providers to shield customers from any liabilities that may arise from money transfer operations. It is also important to harmonize banking and telecommunication regulations to enable mainstream African banks to participate in mobile cross-border money transfers and telecommunications firms to offer micro- deposits and savings accounts. The idea is to allow fair competition by adopting a flexible regulatory framework, which allows risk-based supervision, but also immediate intervention where necessary. This pressure on supervisors is greater where competition of international players is allowed. In monetary union-based RECs (CEMAC or WAEMU), proportionate risk regulation should emerge from close cooperation between financial regulators and telecom authorities; and a MNO licensed in one country would be permitted to issue e-money in all other member states so long as regulators had the capacities of risk-based regulation.

6.2.5 Under the existing FATF framework, proportionate AML/CFT measures ought to emerge from a collaborative 'test and learn' approach. When assessing risk and its mitigation, it is critical that the mobile money's unique 'domino effect' is allowed to increase the degree of financial inclusion. Expanding the formal financial sector and shrinking the informal economy directly lowers overall ML/TF risks. The digital and traceable nature of mobile money makes it a lower ML/TF risk than cash. In this way, financial inclusion and AML/CFT are complementary and support each other.

6.2.6 As mobile payment products become more sophisticated, African regulators need to strengthen regional and national consumer protection frameworks. This will typically start with a diagnostic review of a country's consumer protections and financial literacy. In turn, this will then be followed by regulations and standards agreed collectively by government, regulators, banks and MNOs.

6.2.7 At a minimum, regulations are likely to include (1) identifying an agency to implement education campaigns, conduct research, develop policies, investigate complaints and ensure compliance with the law; and (2) establishing an effective mechanism for receiving and resolving consumer complaints. The latter will have a strong impact on financial institutions' behavior. Few SSA countries have yet established procedures for handling consumer complaints against financial institutions.

6.3 Summary

6.3.1 SSA policymakers and regulators are increasingly challenged to support the growth of these new cross-border services while mitigating potential risks, including fraud, ML and TF). Mobile money transfer is fast, anonymous and without a bank account. Concerns over cross-border ML/TF risks deserve SSA regional and national regulators' careful attention. Policymakers and regulators should be more creative and flexible, while keeping in mind that pushing access to financial services across borders should not come at the cost of regional and national financial stability and integrity. Accordingly, they are advised to develop risk-based regulatory frameworks that balance innovation, competition and customer protection.

6.3.2 To reach the optimal balance, SSA regulators need to improve the ecosystems for cross-border mobile transfers. MNOs and banks must provide African diaspora remitters with adequate information on how mobile channels can be used for cross-border transfers and payments without bank accounts and on how to verify whether cross-border transfers and payments have been completed; and if so, at which value date[40] and exchange rate[41]. Even if remittance senders have adequate information, receivers may find it difficult to receive funds if MNOs and banks lack an adequate regional network of agents, adequate FX risk control capacity and liquidity back-up- particularly in rural areas. Accordingly, regulators need also to determine entry criteria for agent networks involved in cross-border operations, as well as minimums for their liquidity holdings and FX risk management capacities.

40 Today (T+0) or within 2 working days (T+2).

41 Whether converted into local currency directly at cross-rates, or indirectly with multiple calculations (buying-selling first; and selling-buying rates for a bigger profit margin).

7. Conclusion

7.1.1 Mobile payment is financially inclusive, and offers a great potential for financial integration. The lessons from India have significant implications for regulations and policymaking in Africa towards preserving the integrity and safety of domestic and cross-border retail payment systems. Although mobile payments was conceived and launched in Africa, the trends in India provide important insights for Africa and the future directions and implications for regulations and policymaking. The key lessons are that the future of mobile payments is in integration: integration of models -- banks and mobile network operators; integration of systems—inter-operability; and integration of regulatory and policy frameworks across borders. The portability of mobile terminals and gradual development of proximity communications and wireless communication networks will become the key drivers of payment integration, both national and cross-border. The integration will bring more opportunities for development and innovation. The implications are that: industry stakeholders, policymakers, and regulators should cooperatively share information about customers' demand and service developments, fill in potential gaps in regulation, and consider improving the ecosystem for mobile payments services with a focus on: (1) a sound regulation that both encourages innovation, competition and customers' protection; (2) a technically interoperable platform that supports all kind of mobile payment products and their cross-border services; and (3) a knowledge sharing platform for financial education on the unbanked population in Africa.

7.1.2 In order for mobile payments to realize their potential and contribute to financial inclusion and integration, policymakers have to choose their models and regulate mobile payments in line with national economic and financial sector development. As a rule of thumb, nonbank-led models suit low-income African countries (see Table 7-1), where banks' failures to facilitate financial inclusion requires regulators to intervene in the market to promote financial innovations and competition for outreach and accessibility. Banking sectors that are relatively competitive and efficient may prefer bank-led models as a way of stimulating additional services. In medium-income SSA countries that are already reasonably well banked and have related infrastructure, bank-led models may also be more appropriate for convenience and diversity.

7.1.3 Adopting the right models, however, does not guarantee the success of mobile payment programs. Other factors also account for mobile payments' performance in facilitating financial inclusion and integration—as in Kenya. This means that even correctly selected models may still bring disappointing results if the ecosystem lacks in critical success factors. This might as well be why Indian banks have not really made a significant penetration even among their existing customers and "the potential of the mobile phone to extend financial services widely is still to be tapped"[42].

Table 7-1:
Selected Asian and African Countries' bank penetration rate

Unit: Branches per hundred thousand adults

Low income	Bank
Kenya	4.38
Uganda	2.25
Rwanda	1.87
Tanzania	1.84
Burundi	1.81
Ethiopia	1.39
Zambia	3.64
Senegal	4.05
Togo	3.47
Mali	3.48
Benin	2.89
Burkina Faso	1.82

Mid income	Bank
Mauritius	20.11
Tunisia	14.40
Morocco	9.92
Botswana	8.00
South Africa	8.00
Namibia	7.25
India	10.11
Malaysia	11.44
Singapore	10.54
Thailand	11.04
Philippines	11.81
Hong Kong	21.19
Korea	12.27

Source: Financial Access 2010

42 http://www.bis.org/review/r120330f.pdf.

7.1.4 Analysis of mobile payment programs reveals that a sound ecosystem for sustaining domestic mobile payment programs includes the following critical success factors:

- **Risk-based and proportionate regulation that balances innovation, competition and protection of customers.** As well as fostering competition, innovation also challenges regulation. Accordingly, innovations should be regulated in proportion to their risk weightings to prevent them posing excessive risk for regulators and excessive complexity for consumers. To enhance market transparency, MFS providers need to disclose related risks adequately, adopt minimum quality standards for their services, and set up appropriate mechanisms to redress customers' grievances. For the unbanked population, financial education is also needed to help address financial illiteracy.

- **Policy-led inter-operability between different mobile payment products.** Governments need to facilitate inter-operability among different payment systems to ensure that m-wallets, ATMS, chip cards and chip card-based POS terminals are inter-operable. In addition, African RECs which are already in or moving towards monetary union need to develop regional mobile payment systems and related regulation similar to the Europe-wide standards for contactless payments that the Association Européenne Payez Mobile (AEPM) developed in 2008.

- **Development-oriented growth in mobile payments.** For mobile payments to realize their potential, policymakers should improve both 'soft' and 'hard' ICT infrastructure. One helpful way would be through launching G2P payment schemes, which will provide previously unbanked beneficiaries access to financial services by channeling a consistent flow of money to their accounts. Beyond-branch banking is one way of making such payments and services more accessible while at the same time cutting the payment process's cost and increasing its efficiency

- **Strategic partnerships between all stakeholders.** Successful mobile payment business models also require close attention from all parties—mobile operators, banks, card issuers and technology players—if scalable solutions are to gain traction. As mobile payment scenarios expand and industry inter-relationships become more complex, shared challenges will emerge. Energizing embryonic value chains while reassuring users of the low risks would be useful, and would require significant levels of collaboration between operators, as well as with partners in other sectors and regions.

7.1.5 Ecosystems for cross-border mobile payments and transfers are more complex than domestic ones. They also require:

- **Sufficient demand from diasporas in both developed and developing countries to transfer savings to relatives in their home countries.** This will guide financial institutions in extending their reach beyond borders. For the long-term sustainability of cross-border mobile transfers, demand must be high enough to generate benefits to cover the costs of building expertise, forging partnerships and getting approvals from regulators. Advances in technology should further enhance African diasporas' access to cross-border transfer and other banking services.

- **Banking-beyond-office arrangements with extensive networks of non-exclusive agents**. To reduce high costs of SSA cross-border transfers, banks should master IT-enabled retail, correspondent and international banking. To extend effective outreach to the unbanked population, they also need to create widespread awareness that they offer cross-border mobile transfer services at attractive tariffs and alongside a further suite of mobile banking services. This requires establishing a large network of non-exclusive qualified agents. Tools here include multi-lingual capabilities, entry-level product packages and financial education resources.

- **Partnerships between host and home country regulators**. Branch-to-mobile transfers from high to low-income countries are less challenging than the other way around. Accordingly, African countries may sequence changes in regulation of their cross-border mobile payment programs in a similar manner. They could begin by approving inward remittances from selected bank or non-bank branches in advanced countries (such as the US, EU and GCC countries) where most of the African diaspora is located, to the approved SIM cards of domestic mobile phones. As regulators' capacities grow, they could also collaborate with low-income African peers to regulate mobile-to-mobile payments between their countries.

7.1 6 The regulation of cross-border mobile banking should be pursued in a way that enhances the benefits of the product while also controlling the risks. In this regard, the regulatory framework should reflect the model chosen and the prevailing ecosystem as well as match the level of risks.

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About AfDB

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