

# eTransform Africa: Financial Services Sector Study

Sector Assessment and Opportunities for ICT

*January 31, 2012*



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## Executive Summary

The second most populous continent in the world and with abundant natural resources, Africa continues to grow as the world's economy currently stands on shaky ground. However, steady GDP gains are sometimes obscured by the continent's economic, political, and social problems. As Africa grows and becomes more tightly integrated with the global economy, its citizens and businesses increasingly need access to financial services tools that will allow them to compete. Information and communication technology (ICT) is one avenue for increasing that access. ICT and financial services complement each other. ICTs allow for greater financial inclusion, and the financial services sector is a primary driver of communications and network technology.

However, the financial services sector has distinct developmental challenges. Issues of trust, consumer protection, and network systemic risks that can slow the pace of progress require clear and strong regulations. The need for policy and regulatory development is made more difficult by the speed of technological change. Nevertheless, strategic intervention through policy or public investment can play a critical role in addressing the challenges faced by the financial services sector. And the rapid pace of technological change can motivate leaders to accelerate policy deliberations.

The goal of this Financial Services Sectoral Study is to raise awareness and stimulate action, among Africa governments and development practitioners, of how ICTs can contribute to the improvement and transformation of traditional and new economic and social activities in the financial services sector. The study will also recommend ways to scale up the successful application of ICTs within the financial services sector, while paying appropriate attention to associated risks.

## Landscape Analysis

It is striking to see the role ICT and innovative business models have played in the explosive growth of financial inclusion. In Africa, the most visible case is Kenya, where active bank accounts have increased from 2.5 million in 2007 to more than 12 million today. Transactions through mobile banking service M-PESA exceed US\$ 375 million each month and users save up to US\$ 3 on each transaction (Deloitte, 2011).<sup>1</sup>

But Kenya only provides the introduction of a longer story. It took bold thinking and several years for M-PESA to build internal support to get it started. With M-PESA and others now as proof points to reduce risk, new players are entering the market in Kenya and elsewhere, and the time-to-market is reduced. While the pace of adoption may be different from nation to nation, the opportunity is no longer debated; it is just a matter of making it happen.

Summarizing the state of the financial services sector for an entire continent is a daunting task, compounded by rapid advancements that are underway, many made possible by information and communication technologies. Literature on this subject is abundant and useful thanks to concerted efforts at national and international levels to bring attention to both the challenges and opportunities in Africa's financial services sector. For the purposes of this review, focus is given to the prime objectives of improving financial inclusion and nurturing the growth of micro and small businesses. Attention is also given to those operational and supporting systems necessary for improved service provision for these markets.

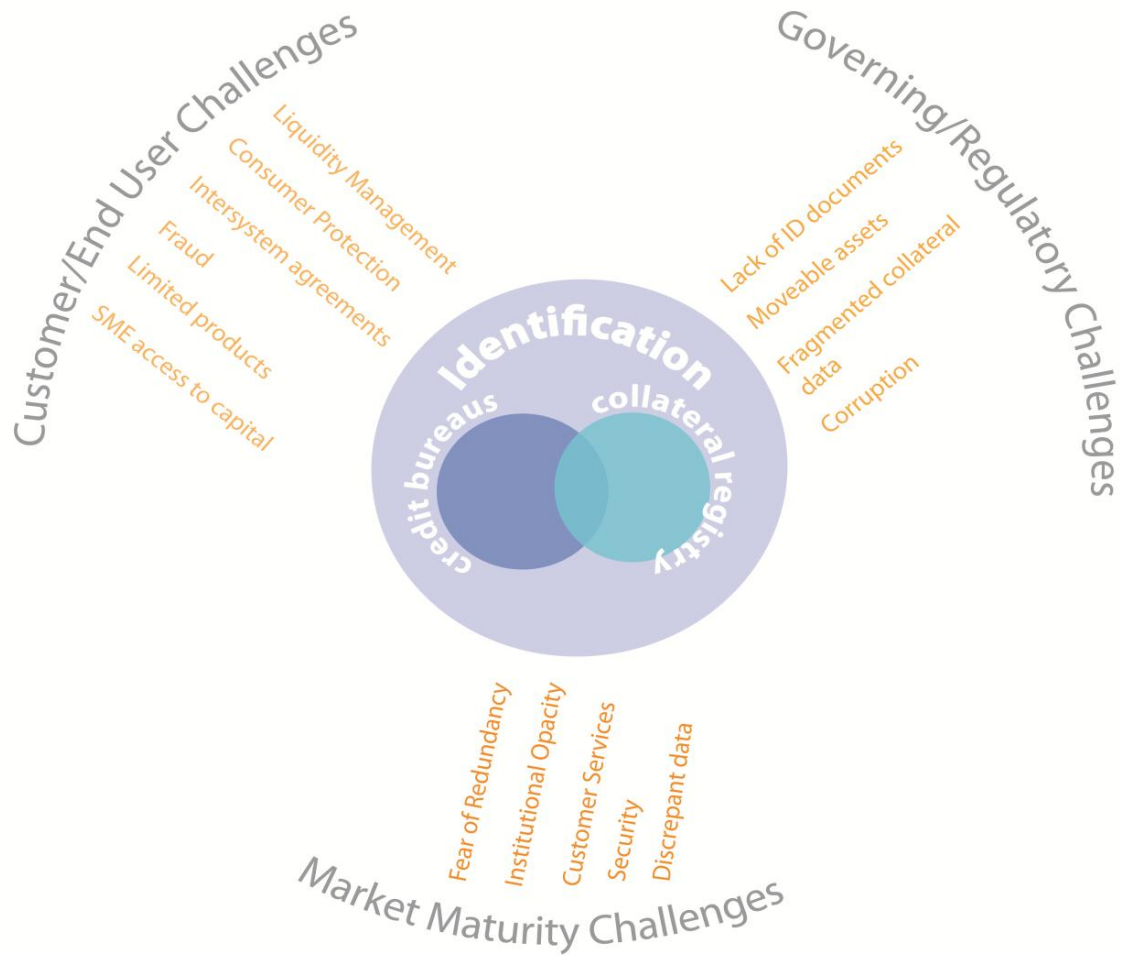
According to Making Finance Work for Africa ([www.mfw4a.org](http://www.mfw4a.org)), “In Africa, on average, less than 20 percent of households have access to formal financial services, with low population densities, poor transport and limited communications infrastructure contributing to a lack of supply in extensive regions of the continent.” There are several methods to monitor national progress on improving financial inclusion (Kendall, 2010; Mylenko, 2010). Among these, one can assess to what extent financial services are available to a population by quantifying points of access, generally defined as the density of financial institution branches within a country. Alternatively, analysis examines the percentage of the adult population that has deposit or credit accounts. The data indicate that compared to countries in other regions, African nations and their citizens have less access to formal financial services and tools.

## **ICT Advances**

Several advances in ICT development present unique opportunities for financial services sector development in Africa. These advances touch all facets of the financial services sector ecosystem, from innovations and cost reductions for user access to devices and transmission technology (including the revolution in mobile communications and the growth of broadband Internet access), data storage and sharing, security, and analytical processing. All of these will be critical enablers to a thriving financial services sector in Africa. These developments can accelerate the drive towards development goals and allow African nations, historically in the lower ranks of financial sector indices, a way to leapfrog challenges that have afflicted other nations.

## **Opportunities and Challenges to Financial Services Sector ICT Application**

Where are the greatest opportunities to apply ICTs to Africa’s financial services sector and what are the challenges that exist to accomplish this objective? This report reviews opportunities where ICT can scale financial services sector development, offers a framework for evaluating and prioritizing these opportunities, and identifies the challenges that remain to realizing this goal. Challenges to greater use of ICT application can be broadly grouped into three major categories: end user challenges, governing and regulatory challenges, and market maturity challenges. These categories, and the major issues that comprise them, are illustrated in the figure below.



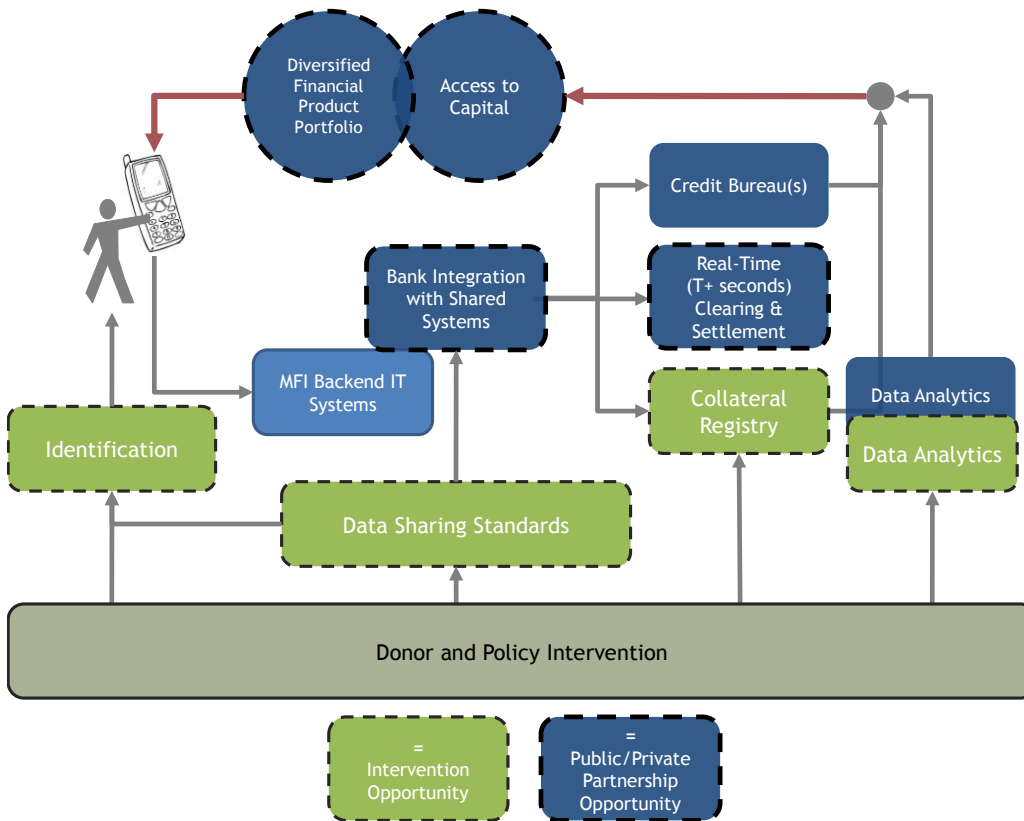
Fortunately, there are initiatives underway that seek to address these fundamental challenges. Seven major initiative areas are identified in the table below. Some of these initiatives and their applicability to African countries are further analyzed in the case studies on Senegal and Kenya, below.

Challenge Area	Key Initiatives
Consumer/End User challenges	<ul style="list-style-type: none"> <li>• Transactional friction and retail payments</li> <li>• New Product Development (savings, lending, MIS options)</li> <li>• SME access to capital</li> </ul>
Governing/regulatory challenges	<ul style="list-style-type: none"> <li>• Identification</li> <li>• Collateral registry</li> </ul>
Market Maturity and Underpinning Infrastructure Challenges	<ul style="list-style-type: none"> <li>• SaaS for MFIs</li> <li>• Credit bureaus</li> </ul>

## Recommendations to National Policy-makers and Donors

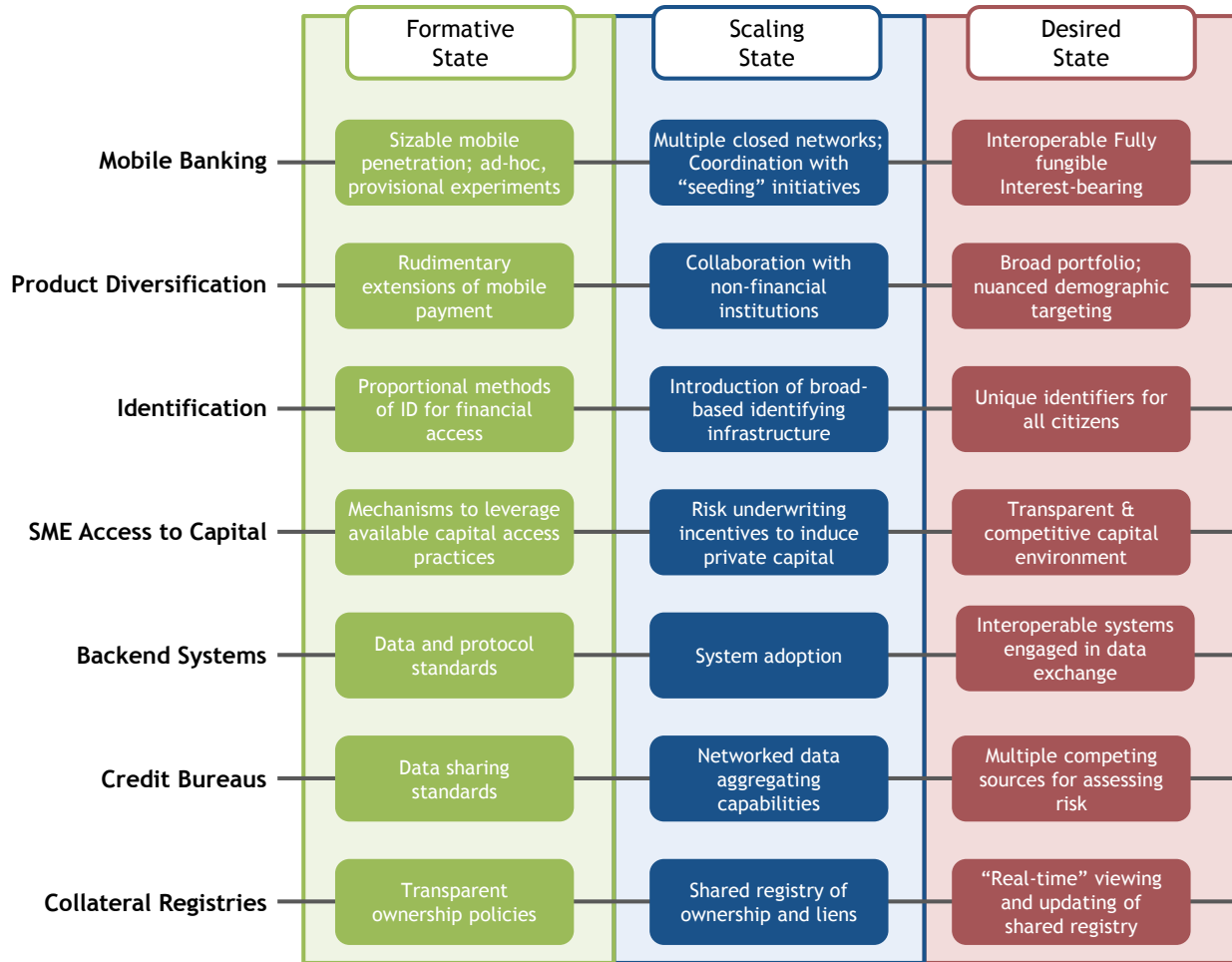
For both national policy makers (including regulators) and international donors, recommendations in this report are organized along two vectors, and divided into the seven opportunity areas mentioned above and discussed in the initial chapters of the report:

1. Recommendations are ordered according to the various states of maturity in which various African countries find themselves in each of the different opportunity areas
2. Recommendations are classified according to whether they address consumer challenges, governing support, or private sector and supporting infrastructure



## Maturity Stages for Opportunity Areas

Applying the framework to the seven identified opportunity areas offers guidance for aligning policy and donor engagement. Policy-makers are best served by using the matrix below to map the state of maturity of their systems to handle the transition to ICT-enable financial services, then determine the set of policy actions they should take. The policy recommendation section also uses this framework.



### Priorities for National Policy-makers

The financial services sector is a complex ecosystem. No single part of the sector can easily be addressed in isolation, and there is no “one size fits all” solution for all countries. From that point of view, each nation will view the recommendations offered here through their own lens when determining their priorities. Some areas justify greater attention due to the degree of maturity of the existing financial services sector and the existing policy/regulatory environment.

**Formative State** – In countries where financial inclusion is at an early stage, and the number and capacity of institutions is low, priorities will be determined by a detailed analysis of where existing policies fall short. In addition to improving technological infrastructure, some focus areas include expanding access to capital for small and medium enterprise (SME) by instituting risk guarantees and subsidies to borrowers. Better diversification of financial products is also a priority for countries in the formative state. In order to achieve such objectives, policies that permit experimentation, multi-institution and agent participation, credit bureau coordination, and, if possible, centralized collateral registries rank higher. Metrics to determine satisfactory progress should be set in terms of size of market, increased footprint, and market players.

**Scaling State** – Once the minimum components for larger financial inclusion are in place, or in countries where there is broader licensing for financial and non-financial institutions (and their agents), the logical priorities are intensified customer recruitment and boosting technological capability to meet the growing demand. In this stage, customer identification becomes crucial. Whether by introducing national IDs accessible to all citizens, allowing alternative forms of identification such as letters from village elders, relaxing requirement for small transactions, or permitting service providers (banks, MFIs, telcos, and agents) to issue IDs by capturing data on unique identifiers, policy considerations should address identification barriers to reach scale. Product diversification should also be prioritized in order to attract more customers through a closed or semi-closed system with greater interoperability.

**Desired State** – Minimum prerequisites and scale are less of a concern at this level of maturity than interoperability and a diverse portfolio of products that meet a variety of demands. Products should evolve to match changing socio-economic conditions in a fair competitive environment. Policies at this state need to ensure that a more robust market benefits customers by lowering costs and allowing customer to use different services without limitations of place, time, or the type of agent they use.

State of Maturity \ Focus	Consumer	Public Sector	Private Sector
Formative State	<ul style="list-style-type: none"> <li>Product diversification</li> <li>Wider consumer identification options</li> </ul>	Engage in policy experimentation in: <ul style="list-style-type: none"> <li>data standardization and alternatives</li> <li>transparent property ownership</li> </ul>	<ul style="list-style-type: none"> <li>Diversify products and capital raising channels</li> </ul>
Scaling State	<ul style="list-style-type: none"> <li>Raise overall awareness</li> <li>Incent and require obtaining ID</li> </ul>	<ul style="list-style-type: none"> <li>Remove artificial levies on technologies</li> <li>Mandate IPv6 transition and compliance</li> </ul>	<ul style="list-style-type: none"> <li>Minimize monopoly and ramp up interoperability</li> </ul>
Desired State	<ul style="list-style-type: none"> <li>Ensure competitive environments and consumer protection</li> </ul>	<ul style="list-style-type: none"> <li>Policy conducive to integrated financial services in place</li> </ul>	<ul style="list-style-type: none"> <li>Full-fledged Interoperability</li> <li>Platforms for basic payments as semi-public products</li> </ul>

### Priorities for Donors

As expressed previously, the financial services sector is a complex ecosystem where no one piece can easily be addressed in isolation, made only more complex when factoring the varying degrees of maturity. Each nation will view the offered recommendations through their own lens when assessing their own priorities.

Nevertheless, across opportunity areas, recurring messages for donors emerge:

- Reduce private sector risks by underwriting the risk of “first mover.”
- Reduce shared costs by underwriting supporting systems that are common all financial service players.

- Leverage limited donor resources to drive private and consumer action towards desired financial service sector goals

Depending on the state and focus of a particular nation’s need, donors should focus on these priorities:

State of Maturity \ Focus	Consumer	Public Sector	Private Sector
Formative State	Raise consumer awareness; back solution incubators and heavy experimentation translating needs into products	Fund coordinating efforts; standards for data and data sharing	Engage through challenge incentives
Scaling State	Move donor benefits through ICT channels to drive adoption	Introduce support systems for financial services - Identity and property registries	Fund introduction of privately managed financial services support systems - clearing and settlements
Desired State	Promote a broader and more varied product set through investment in experimentation	Financial systems infrastructure tightly integrated with administrative structures	Invest in efforts to accelerate adoption of shared systems

Nowhere is the pace of change in financial services greater than it is now in Africa. ICT is the catalyst. Daily announcements about new products and changes to Africa’s financial services landscape have become the norm. The challenge and opportunity now is to capitalize on these advances to meet the rapidly increasing demand for financial inclusion.

Donors have unprecedented opportunity to leverage limited funds to help the private sector deliver financial service solutions made possible by ICT. Given the pace of change, and the multitude of interlocking components of a vibrant financial services sector, donors will need to promote coordinated activities that will keep all actors moving forward effectively. Regional bodies and those with a specific financial sector focus, such as the African Development Bank’s Making Finance Work for Africa, will play an increasingly critical role if African nations are to achieve the benefits of cross-fertilization and cost sharing during this period of rapid growth.

## **Chapter 2: Introduction and Landscape Analysis**

The second most populous continent in the world and with abundant natural resources, Africa continues to grow as the world's economy currently stands on shaky ground. However, steady GDP gains are sometimes obscured by the continent's economic, political, and social problems. As Africa grows and becomes more tightly integrated with the global economy, its citizens and businesses increasingly need access to financial services tools that will allow them to compete. Information and communication technology (ICT) is one avenue for increasing that access. ICT and financial services complement each other. ICTs allow for greater financial inclusion, and the financial services sector is a primary driver of communications and network technology.

However, the financial services sector has distinct developmental challenges. Issues of trust, consumer protection, and network systemic risks that can slow the pace of progress require clear and strong regulations. The need for policy and regulatory development is made more difficult by the speed of technological change. Nevertheless, strategic intervention through policy or public investment can play a critical role in addressing the challenges faced by the financial services sector. And the rapid pace of technological change can motivate leaders to accelerate policy deliberations.

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### **The Financial Services Sector**

The financial services sector is a primary driver of communications and network technology. However, the sector has distinct developmental challenges. Issues of trust, consumer protection, and network systemic risks that can slow the pace of progress require clear and strong regulations. The need for policy and regulatory development is made more difficult by the speed of technological change. Nevertheless, strategic intervention through policy or public investment can play a critical role in addressing the challenges faced by the financial services sector. And the rapid pace of technological change can motivate leaders to accelerate policy deliberations.

It is striking to see the role ICT and innovative business models have played in the explosive growth of financial inclusion. In Africa, the most visible case is Kenya, where active bank accounts have increased from 2.5 million in 2007 to more than 12 million today. Transactions through mobile banking service M-PESA exceed US\$ 375 million each month and users save up to US\$ 3 on each transaction (Deloitte, 2011).<sup>2</sup>

But Kenya only provides the introduction of a longer story. It took bold thinking and several years for M-PESA to build internal support to get it started. With M-PESA and others now as proof points to reduce risk, new players are entering the market in Kenya and elsewhere, and the time-to-market is reduced. While the pace of adoption may be different from nation to nation, the opportunity is no longer debated; it is just a matter of making it happen.

If irrefutable proof points and clear cases of momentum among early adopters are indicators that a tipping point has been reached for actively using ICT to advance financial services development goals in Africa, then the time has come for policy makers to act, and act boldly.

The eTransform initiative of the African Development Bank, infoDev, and the African Union has set out the ambitious objective to identify those policies and strategic investments necessary to scale the promising applications of information and communication technology (ICT) to Africa's most pressing economic and societal challenges. The eTransform initiative will drive toward policy and strategy recommendations in three stages:

1. Assess the state of Africa's financial services sector, infrastructure and global ICT trends
2. Identify the most promising opportunities to apply ICT to Africa's financial services sector and the challenges that exist to accomplish this objective
3. Develop the policy and investment recommendations to overcome identified challenges

This study represents the first stage of this project.

## **Introducing the Landscape**

The eTransform project strives to identify opportunities where promising applications of ICT to financial services sector development may be scaled through supportive policy strategies and strategic investment interventions.

As a first step for the initiative, this assessment of the financial services sector in Africa offers:

1. A view of the issues facing financial services sector development with notable attention given to obstacles to financial inclusion and the needs of micro and small businesses.
2. A review of significant ICT advancements with particular applicability to Africa's financial services sector development.
3. Consideration of where these ICT developments may play a role in addressing financial services sector issues by identifying example solutions that may have applicability to financial service issues in Africa.

The result of this landscape will serve as the basis for the second stage of the eTransform project to examine, among the cases identified, which offer the greatest promise for developing the financial services sector in Africa and what challenges stand in the way of scaling these solutions across the continent.

## Africa's Financial Services Sector

Summarizing the state of the financial services sector for an entire continent is a daunting task, compounded by rapid advancements that are underway, many made possible by information and communication technologies. Literature on this subject is abundant and useful thanks to concerted efforts at national and international levels to bring attention to both the challenges and opportunities in Africa's financial services sector. For the purposes of this review, focus is given to improving financial inclusion and nurturing the growth of micro and small businesses. Attention is also given to those operational and supporting systems necessary for improved service provision for these markets.

### *Categorization of Financial Services*

The term “financial services” can refer to a wide variety of products and services pertaining to the lending, storage, transfer, and management of money. While there are thousands of financial instruments and services offered by financial institutions to individuals, businesses, and governments, the categories listed in the table below concern basic financial inclusion for African individuals and small businesses.

Financial Service Category	Defined	Relevant Sub-Categories
Deposits (Checking)	Highly liquid banking transactional accounts with typically low fees and low interest rates	Consumer and business checking accounts
Deposits (Savings)	Banking accounts intended for deposit security offered at moderate interest rates and lower liquidity than checking accounts	Consumer and business savings accounts (incl. money market accounts), microsavings (small savings accounts often with no minimum balance)
Loans	Contract offering money in return for repayment of principal plus interest, fees and/or ownership stake; often secured by property or other assets	Consumer: House loans, car loans, personal loans; Islamic financing
		Business: Inventory loans, equipment loans, Islamic financing; microloans (small business loans)
Credit Products	Instruments allowing borrowing of money based on expected repayment of principal plus interest; often unsecured and revolving	Bank consumer and business credit cards and accounts; store or vendor accounts
Insurance	Contract products that use collected premiums and fees to provide protection from loss by pooling risk	Consumer: Property insurance, health insurance
		Business: Property insurance, crop insurance, liability insurance
Remittances/Transfer	Products allowing transfer of money between individuals or businesses	Wire transfer, mobile money transfer
Investments/ Pensions	Assets purchased in anticipation of return based on growth in value of assets; often higher risk than other deposit accounts and designated for retirement or supplementary income purposes	State and private pensions, bank or insurance provider investment accounts

### *State of Financial Inclusion in Africa*

According to Making Finance Work for Africa ([www.mfw4a.org](http://www.mfw4a.org)), “In Africa, on average, less than 20 percent of households have access to formal financial services, with low population densities, poor transport and limited communications infrastructure contributing to a lack of supply in extensive regions of the continent.”

There are several methods to monitor national progress on improving financial inclusion (Kendall, 2010;<sup>3</sup> Mylenko, 2010).<sup>4</sup> Among these, one can assess to what extent financial services are available to a population by quantifying points of access, generally defined as the density of financial institution branches within a country. Alternatively, analysis examines the percentage of the adult population that has deposit or credit accounts. Table 1 is a composite of both methods, offering a relative ranking only within documented African nations.

Despite the relatively low ranking of many African nations compared to countries in other regions, governments and donors are now showing considerable interest in improving regulatory regimes and scaling financial services innovations. In part, they are doing so by looking to examples outside the region where government programs and progressive regulation have been used to increase financial inclusion (see box on Brazil on page 15). And African nations themselves are becoming laboratories of financial services experimentation.

Table 1: Financial Inclusion Indicators for Africa

Country	Branches per hundred thousand adults	Branches per hundred thousand adults	Branches per thousand Km <sup>2</sup>	Branches per thousand Km <sup>2</sup>	Deposit accounts per thousand adults	Deposit accounts per thousand adults
	Combined (Commercial, Co-ops, SSFIs, MFIs)	Rank	Combined (Commercial, Co-ops, SSFIs, MFIs)	Rank	Combined (Commercial, Co-ops, SSFIs, MFIs)	Rank
Mauritius	20.11	4	96.55	1	2109.04	1
Tunisia	31.87	1	16.16	4	1143.36	2
Cape Verde	28.94	2	22.58	3	1137.83	3
Botswana	10.29	8	0.23	31	912.50	4
South Africa	8.00	11	2.22	14	839.13	5
Namibia	7.25	14	0.12	32	757.61	6
Algeria	5.30	17	0.55	26	736.56	7
Nigeria	9.54	9	9.09	6	495.21	8
Gambia	24.50	3	23.40	2	487.04	9
Morocco	15.91	6	7.93	7	412.14	10
Kenya	4.41	20	1.71	17	389.62	11
Swaziland	4.14	21	1.69	18	383.49	12
Ghana	8.29	10	5.21	9	332.61	13
Lesotho	3.10	24	1.25	19	319.37	14
Togo	7.72	12	5.48	8	290.99	15
Benin	7.44	13	3.31	12	273.92	16
Rwanda	1.87	31	4.26	11	226.15	17
Mali	18.24	5	1.06	22	223.13	18
Senegal	12.80	7	4.57	10	206.07	19
Uganda	2.73	25	2.23	13	195.73	20
Zimbabwe	2.13	29	0.41	30	178.60	21
Malawi	2.16	28	1.75	16	175.57	22
Cote d'Ivoire	2.12	30	0.81	24	170.56	23
Burkina Faso	6.57	15	1.97	15	167.96	24
Ethiopia	2.42	27	1.10	20	144.03	25
Mozambique	3.89	23	0.60	25	140.50	26
Burundi	5.11	18	9.81	5	113.14	27
Liberia	1.85	32	0.42	29	102.08	28
Sierra Leone	2.44	26	1.08	21	98.62	29
Niger	1.64	34	0.10	33	51.91	30
Zambia	5.62	16	0.51	27	44.35	31
Madagascar	4.47	19	0.83	23	33.29	32
Guinea Bissau	0.00	36	0.00	36	5.81	33
Mauritania	3.89	22	0.07	34	No data	No data
Sudan	0.04	35	0.00	35	No data	No data
Tanzania	1.84	33	0.49	28	No data	No data

Prepared by Bazaar Strategies LLC using CGAP Financial Access 2010

### *Gender Factors*

Male-centric social structures and age-old traditional practices heavily disadvantage women in most parts of the world. Africa presents a case where gender gaps are felt in almost all aspects of life including education, nutrition, health, employment, and access to essential services. Ironically, the economic and social contributions of women are higher in comparison to men. They often work long hours for a fraction of the earnings collected by men. Despite their minimal ownership of land, for instance, women constitute the main agricultural labor force in Africa, producing most of the food consumed by households. In order to supplement the incomes of their families, they engage in informal sector activities like craftwork and selling various kinds of products in addition to raising children. The overall responsibility of providing food, fetching water, and taking care of the sick often falls on the shoulders of women.

Undeniably, there have been strides toward improving the participation of women in development efforts. One of these areas is financial inclusion. Microfinance has been a key factor in empowering women by providing much needed microloan and savings services. Most members of village savings groups popular in parts of Africa, for example, are women. The impacts of these gains, however, are limited, and the majority of African women still lack access to basic financial services. Further, the reluctance of banks to offer their products to low-income customers and miniscule ownership or control of assets by women often translate to inability to obtain loans to finance small and medium businesses, which perpetrates cycles of poverty.

Similarly, limited penetration of ICTs inhibits the participation of women, especially in rural areas. This problem is compounded by lower female literacy rates across Africa. Going to shared access points such as Internet cafés, even where such services are available, involves traversing difficult economic and social barriers. Among different ICTs that exist today, mobile telephony has proved to be the most convenient for women in Africa. Lower price points, ease of use, and rapid changes in user interface features lower the digital literacy barriers that excluded women in the past. These advantages also provide a path to financial inclusion for women through the ever-increasing availability of mobile banking services.

## International Financial Inclusion - Brazil

Encouraged by the reasonable success of what is known as the conditional transfer of cash program or *Bolsa Familia*, Brazil's Ministry of Development is pushing forward an ambitious financial inclusion project that could reach up to 60 million people. This whopping number includes the 12 million current beneficiaries of the conditional transfer program and their families (a total of 45 million), as well as an additional 15 million people classified as poor. Since 2003, the government has been disbursing \$35 to each female head of household with the requirement that recipients fulfill conditions such as sending children to school and ensuring regular health checkups. Considered a citizenship right, Brazil's financial access strategy innovation piggybacks on cash transfers intermediated through bank accounts issued by a government bank, *Caixa*, to usher the financially excluded into a variety of financial services. What is also remarkable is that *Caixa* is authorized to provide identification cards to those who lack such documents, removing one of the top hurdles of financial inclusion.

**Poverty Reduction Strategy:** Conditional Cash Transfers, or G2Ps, are part of Brazil's comprehensive long-term plan to reduce poverty significantly. Co-designed by the World Bank, the strategy that targets families has seen strong performance and is replicated in other countries such as Chile, Mexico, Turkey, and Indonesia. For the purpose, Brazil introduced social change policies and empowered municipal authorities to augment as well as manage social spending. Paralleled by steady growth in the overall economy and improved financial inclusion, the poverty rate in the country sank by 4.9% between 2004 and 2006.

**Regulations:** Until the 1990s, public banks dominated the task of providing financial services access, especially to lower income segments of the population. In only four years, from 2000-2004, Brazil added more than 9 million bank accounts, 865 bank branches and 11,150 ATMs. This growth was, in part, enabled by a series of revisions of the regulations pertaining to Correspondent Banking (CB) since 1999. These correspondents are non-financial institutions with broader footprint than bank branches, such as post offices, pharmacies, stores, and lottery kiosks that serve as outlets to provide a range of financial services in partnership with banks. Accounting for more than 62% of the financial services available in every one of the 5,564 municipalities in the nation, the network of correspondents representing public and private banks reached close to 70,000 since 2005. This is an unprecedented level enabled by favorable regulatory reforms, reducing the cost of banking in terms of flexible liquidity management, low labor and security costs. The transactions the correspondents perform include account opening, deposits, withdrawals, loans, cash-ins/outs, bill payments, and other services.

**ICT for Financial Services:** Managing a network of tens of thousands of correspondents would have undoubtedly been rather difficult without ICTs. Capturing customer data, interfacing with core banking systems directly or through integrator providers, processing, analysis, and storage of data all require inexpensive ICT solutions in order to operate efficiently. In this regard, steps taken by the Brazilian government to popularize branchless banking spawned a massive technological ecosystem comprising in-store POS (Point-of-Service) terminals, keypads, barcode scanners, and other technologies used by correspondents, together with databases and servers that are linked via dial-up, broadband, GPRS, or satellite connections. Complimenting Brazil's ICT landscape are incentives for local companies to drive down costs and funding academic projects that focus on innovation. As a result, the correspondent banking model has become a dynamic game-changer and contains most of the essential ingredients that facilitate further amplification, such as wider mobile banking services.

## The Challenges

There are many issues that inhibit greater financial inclusion. They can be categorized as end user challenges, governing/regulatory matters, and market maturity challenges. Compounding these issues are limitations of the underpinning financial systems necessary to deliver financial services.

### End user challenges

Consumers face barriers to adopting financial services designed for developed markets where identification is well documented, general and financial literacy are presumed, and where there is a wealth of information about consumer behaviors (and specific consumers).

Capital access creates a particular challenge for micro and small businesses for whom even basic liquidity management remains a problem. In Nigeria, for example, only five percent of SMEs have access to a loan (Isern, 2009).<sup>5</sup>

Table 2: Consumer/End User Challenges

Financial Sector Development Challenges	Defined
Transient populations	People who move frequently are difficult to serve with current products, methodologies, and delivery channels
Remote populations	People too costly to serve through conventional financial sector practices
Understanding of consumer needs (behavior and demographics)	There is too little market research about the financial elements of clients' lifestyles—such as cash flow and asset accumulation—to promote the design of valuable services
General literacy	Ability to utilize financial products, even when made available through channels such as mobile phone
Financial literacy	Limited understanding of the relevance and ramifications of utilizing financial services, if available
Trust of banking institutions (exposure and history)	Perceptions among unbanked that these institutions are 'not for them' or challenges of previous experiences with fraud or hyperinflation
Capital access (SME/MSME)	Availability and diversity of capital access channels and products

Source: Bazaar Strategies LLC; Special thanks to the Center for Financial Inclusion which has compiled and vetted the majority of financial inclusion constraints described for soon-to-be-released survey

### Governing/regulatory challenges

Many organizations are currently promoting government policies and regulations that would enable greater financial inclusion. Invaluable efforts to share and coordinate financial inclusion experiences across Africa and the globe are exemplified by the G20's call for instituting Principles for Innovative Financial Inclusion, the Consultative Group to Assist the Poor and their attempt to measure financial inclusion and analyze the effectiveness of governing strategies, and the Africa Panel on Progress and

The World Economic Forum’s efforts to convert knowledge to action. Perhaps the most targeted policy initiative is that of The Alliance for Financial Inclusion, bringing together policy makers and central bank representatives from around the world to share best practices and work through perplexing and common regulatory matters.

Table 3: Governing/Regulatory Challenges

Financial Sector Development Challenges	Defined
Lag of regulation to keep up with technological pace	Regulation and supervision that does not keep pace with (and therefore slows the spread of) new technologies
Documentation requirements	Rigidity of identification requirements for opening formal accounts that do not accommodate either proportional flexibility or embrace options made possible through ICT (e.g., biometrics)
Prioritization of financial inclusion	Prudential regulation that prioritizes stability over access may tilt service providers away from pursuing inclusion
Limited regulatory framework for MFIs	Weak regulation and supervision of microfinance institutions and other institutions dedicated to serving the poor, such as policies preventing them from taking deposits
Political interference	Politicians advocate harmful policies for political gain; no repayment movements or debt protests hinder operations of financial service providers
Non-business friendly environment	Corrupt officials, stifling bureaucracies, and political instability prevent institutions from forming and growing
Inadequate client protection	Client protections ensuring that services are transparent, fair and appropriate for their customers are not well-developed among providers or regulators
Weak legal infrastructure	Weak courts and poorly defined and/or enforced property rights and contractual agreements make it risky or costly for providers to serve low-income clients

Source: Bazaar Strategies LLC; Special thanks to the Center for Financial Inclusion which has compiled and vetted majority of financial inclusion constraints described for soon-to-be-released survey

While a range of policy-related issues have been identified (AFI, 2010),<sup>6</sup> policy efforts gaining the most attention are those that support innovative strategies for expanding access to financial services through alternative delivery channels and technologies. These alternatives address both business model strategies (e.g., permitting financial institutions to partner with other firms with more extensive distribution networks such as mobile operators and retailers, commonly referred to as branchless banking) and technological strategies that permit value transfer and financial service access via mobile phone networks.

For financial inclusion, the principle of proportionality applies to the requirements for identification or collateral. Frequently a challenge among the financially excluded is the lack of formal means of identification necessary to open a conventional bank account. In addition, access to credit is frequently denied to those whose assets (e.g., house or property) are not verifiable through current title or land registries. To lower these barriers, some progressive nations have allowed for entry-level

financial instruments, such as informal collateral guarantees or simple savings accounts with low maximum balance thresholds that can be opened without formal means of identification.

In cases of both branchless banking and proportional regulatory measures, African nations are in the midst of adopting or testing such guidelines. Appendix A offers a review of guidelines available across Africa. In most cases, some form of branchless banking guidelines exist, or central banks are at an earlier stage but approving requests on a case-by-case basis. On the subject of proportionality, however, less progress has been made.

### **Regulations Most Pertinent to ICT and Financial Inclusion**

Electronic payment systems and monetary value creation regulations show different levels of development in Africa. This impacts the readiness of countries to allow financial service offerings by entities other than banks, such as telcos. Despite the high penetration rate and immense service-delivery capabilities of mobile phones, central bank regulations have not been proactive enough to take advantage of technological advances. Whereas many African countries embrace financial inclusion, they typically leave the task of banking the unbanked to microfinance institutions (MFIs) that traditionally have a higher exposure to risk. Beyond regulations, paper-based or partially functional electronic clearing and settlement systems for gross and retail payments also stand in the way of mobile banking services that require real-time processing.

The situation seems to be changing across Africa as several countries have introduced real-time settlement systems, while a growing number, like Kenya, have created favorable regulations for financial services offered on mobile platforms. Where regulations are not yet in place, mobile money transfer services are gaining some traction, albeit on a case-by-case basis. Below, this document briefly examines the regulatory readiness of African countries in allowing non-bank institutions to offer financial services on their own or in collaboration with banking partners. (For full details see Appendix 3, which outlines pertinent regulations in each African country.)

#### Leaders: Regulations in Place

Countries designated as Leaders are those that have undertaken significant systemic reform by creating transparent regulations that allow for innovation and greater financial inclusion. Tolerance by the Central Bank of Kenya before its recent creation of specific regulations allowed third-parties to operate money transfer services like M-PESA across the country with minimal risk and a high level of success. M-PESA's strong performance in mobile money transfer services showed the potential of reaching the poor living in remote areas, which has since sparked interest not only in Africa but also other continents. Ghana, Nigeria, Botswana, South Africa, and Sudan now have detailed regulations that permit branchless or agent banking that involves a non-bank entities. Regional blocks that have introduced favorable regulations allowing telcos and other non-bank third parties to offer financial services include Francophone West African countries like Senegal, Cote d'Ivoire, Burkina Faso, Mali, Togo, Niger, Benin, and Guinea Bissau, whose financial institutions are regulated by the Central Bank of West African States (BCEAO), although services have not been launched in all member countries.

Iterators: Case-by-Case Models

Nations identified as Iterators are those that are allowing limited experimentation in areas such as mobile money transfer. While explicit regulations may not have been instituted, there have been several African countries that tolerate mobile money transfer services by issuing licenses on a case-by-case basis, and often requiring the involvement of a licensed bank. These countries include members of the Bank of Central African States (Gabon, Cameroon, Chad, Central African Republic, Republic of the Congo, and Equatorial Guinea), a regional central bank covering Francophone countries in the central African region. Regardless, it should be noted that telcos have not yet entered the mobile banking services market in the Central African region in a significant way. Zimbabwe, Namibia, Malawi, and Swaziland are iterators that have shown willingness to experiment. A different model is that of Mozambique, which allows third parties to offer financial services by law rather than by regulations from the central bank.

Not Ready

A dwindling number of African countries, those designated here as Not Ready, are a long way from embracing financial services offered on mobile platforms. With a population of over 80 million, the largest country in this category is Ethiopia, whose central bank does not yet allow any form of mobile money transfer services, although several projects involving private companies and government institutions have been proposed and the government may consider issuing licenses with the launch of its new real-time gross settlement system in coming years. Somalia, Liberia, Mauritania, Eritrea, Djibouti, and a few others have underdeveloped financial sectors that make mobile banking a dim possibility in the near future.

**Market maturity and underpinning financial system challenges**

Financial inclusion may be limited by a poor competitive environment or a lack of supporting infrastructure. The table below describes the market maturity and financial system challenges common in African countries.

Table 4: Market Maturity and Underpinning Financial System Challenges

Financial Sector Challenges	Defined
Financial Inclusion - Market Maturity Challenges	
Provider interest	Providers may not try to reach low-income clients because they do not perceive the poor as viable clients. Policy makers may not promote inclusion if they do not value it
Weak industry voice	The providers of financial inclusion are not organized enough to advocate effectively for their interests with policymakers or to set standards for themselves
Cost of established or conventional practices	High fixed and running costs make branches an expensive delivery channel for poor neighborhoods and sparsely populated areas
MFI single product approach	Microfinance is overwhelmingly microcredit; many microfinance institutions have been unable to significantly broaden their product range
Interoperability, network cooperation	Delivery channels like mobile banking and correspondent banking need a critical level of participation (by agents, telecoms, clients, etc.) or interoperability to generate value
Cost of established or conventional products	Conventional products are designed to be supported by higher cost infrastructure or available supporting systems (e.g., traditional credit bureaus); this results in high prices or impractical solutions for the poorest and most remote market segments

Insufficient infrastructure	Underdeveloped transportation, communication, and power grid structures limit delivery of financial services in rural and remote areas
Poor/abusive business practices	Financial institutions that poach staff and clients, use abusive collections practices, pursue excessive profits, and over-indebt clients hurt the whole industry
Exposure to poor/unbanked customers	Mainstream financial services providers lack sufficient understanding of how to design, price, and market financial services to low-income people
<b>Underpinning Financial Systems</b>	
Backend operations at smaller banks and MFIs	MFIs with greater reach to unbanked consumers and SMEs have limited or no backend systems that afford the ability to support modern advances such as mobile payments
Availability of credit bureaus	Insufficient information about borrowers' debt and repayment history limits providers' ability to assess repayment capacity, discouraging them from serving new, poorer clients
Collateral registry	Unclear ownership and lien obligations lead to higher risk and interest rates as well as over-indebtedness due to oversubscribed assets
Real-time payment processing and settlement (T+ seconds)	Inability of retail clearing and settlement systems to handle true real-time processing and settlement creates major challenge for electronic payment systems in competing with the fungibility of cash
Broader international banking integration	Greater inter-bank and international banking integration has been shown to spread systemic risk and financial shocks

Source: Bazaar Strategies LLC; Special thanks to the Center for Financial Inclusion who has compiled and vetted majority of financial inclusion constraints described for soon-to-be-released survey

For smaller banks and less formal micro-finance institutions, lack of IT systems to manage operations creates a barrier to leveraging recent advances in mobile banking despite their proximity to financially excluded markets. Such systems are necessary in order to minimize operational costs to levels sustainable for low-value accounts and to process transactions in a true real-time period (i.e., transactions settled seconds after or simultaneously with clearing) required to conform to the high turn-over demands for cash among poor markets. Even larger financial institutions suffer from a lack of true real-time payment clearing houses, contributing to the closed system nature of mobile money systems.

Financial systems that serve multiple institutions such as collateral registries and credit bureaus are drawing greater attention (IFC, 2010).<sup>7</sup> Ghana has most recently received praise for its efforts to launch a collateral registry. The country continues to improve on its solution by Web-enabling the registry for registered users (see Chapter 3 for details).<sup>8</sup>

Without improved abilities to gather, share and interpret asset, consumer, and transaction data, Africa's financial services sector will struggle to advance. Research also suggests financial institutions and countries that are poorly networked into the broader global financial network face greater risks when managing economic shocks (Minoiu, 2011).<sup>9</sup>

### *Africa's readiness to adopt ICT innovations*

African nations have much to gain by investing in ICT for financial services sector development. However, some countries may be better poised than others to take advantage of those investments. The World Economic Forum's Networked Readiness Index (NRI) is a composite of more than 70 indicators used to assess annually the state of ICT readiness in the world (Dutta 2011).<sup>10</sup> The NRI organizes these indicators into a framework of three categories:

1. The conduciveness of national environments for ICT development and diffusion
2. The degree of preparation for and interest in using ICT among individuals, businesses, and government
3. The actual use of ICT by these stakeholders

While most African nations fall within the lower scale of the Index, the data still reveal interesting observations when examining the state of African nations relative to one another. By comparing overall NRI rankings to the sub-index for assessing the state of ICT infrastructure, it's possible to see how ICT investments contribute to (or detract from) a nation's overall score. Through this comparison, one might assess those nations more ready to utilize further ICT investments and those with underutilized ICT assets. Table 5 provides this comparison for countries included in the NRI.

Table 5: Overall NRI Rank Compared to Infrastructure Readiness Sub-Rank

Country	Overall NRI Rank	NRI Infrastructure Readiness Sub-Rank	Country ICT Opportunity
Botswana	91	106	<p><b><u>ICT Investment Impact Opportunity</u></b> There is a notable difference in overall NRI rank and the supporting rank for infrastructure readiness (a difference of greater than 10 places), suggesting these markets may be in the greatest demand for ICT infrastructure.</p>
Cape Verde	84	117	
Ethiopia	123	137	
Gambia	76	110	
Ghana	99	118	
Kenya	81	102	
Mali	120	134	
Mauritius	47	78	
Mozambique	106	133	
Namibia	82	108	
Senegal	80	91	
South Africa	61	73	
Tunisia	35	57	
Lesotho	121	130	<p><b><u>Some ICT Investment Impact</u></b> There is some difference (greater than 5, less than 10 places) between overall NRI rank and infrastructure readiness rank, suggesting markets may be in greater relative demand for ICT infrastructure than is available.</p>
Nigeria	104	112	
Uganda	107	116	
Zambia	102	111	
Benin	114	113	<p><b><u>Readiness and Infrastructure on Par</u></b> Overall NRI ranking and infrastructure readiness ranking are comparable, suggesting a more balanced strategy of ICT investments, awareness, and usage are in order.</p>
Cameroon	125	122	
Chad	138	135	
Mauritania	130	129	
Angola	133	136	
Burkina Faso	122	123	
Egypt	74	75	
Madagascar	129	132	
Malawi	105	109	
Morocco	83	84	
Tanzania	118	120	
Burundi	137	131	<p><b><u>Some Underutilization of ICT Assets</u></b> There is some difference between overall NRI rank and the supporting rank for infrastructure readiness (greater than 5, less than 10 places), suggesting markets can do the more to improve the environmental conditions and awareness to make better use of existing ICT assets.</p>
Côte d'Ivoire	113	103	
Swaziland	134	127	
Zimbabwe	132	125	
Algeria	117	101	<p><b><u>Greatest Underutilized ICT Assets</u></b> There is a notable difference between overall NRI rank and the supporting rank for infrastructure readiness (a difference of greater than 10 places), suggesting these markets can do the most to improve the environmental conditions and awareness to make better use of existing ICT assets.</p>
Libya	126	89	

Prepared by Bazaar Strategies LLC using the World Economic Forum, The Global Information Technology Report 2010-2011.

## **ICT Advances**

Several advances in ICT development present unique opportunities for financial services sector development in Africa. These advances touch all facets of the financial services sector ecosystem, from innovations and cost reductions for user access to devices and transmission technology (including the revolution in mobile communications and the growth of broadband Internet access), data storage and sharing, security, and analytical processing. All of these will be critical enablers to a thriving financial services sector in Africa. These developments can accelerate the drive towards development goals and allow African nations, historically in the lower ranks of financial sector indices, a way to leapfrog challenges that have afflicted other nations. Table 6 provides an overview of key ICT developments and their associated benefits.

Table 6: Key ICT developments

ICT Category	Important Developments	Benefits
Data Storage and Application Hosting	Increased local storage	<ul style="list-style-type: none"> <li>• Mobile phone as PC replacement</li> </ul>
	Remote and shared storage – cloud computing	<ul style="list-style-type: none"> <li>• Group-based data input/sharing</li> </ul>
	Software-as-a-service (SaaS)	<ul style="list-style-type: none"> <li>• Alignment of limited IT skilled resources to higher value application development</li> <li>• Shared expertise and experience</li> <li>• Reduction in costs</li> </ul>
Data Transmission	Satellite (end point and Internet backhaul)	<ul style="list-style-type: none"> <li>• Affordable access to broadband data including rural regions (O3bnetworks.com)</li> </ul>
	Terrestrial wireless – broadband/data	<ul style="list-style-type: none"> <li>• Ability to access broadband Internet where fiber networks are absent using 4G-quality networks</li> </ul>
Consumer Device Advances	Intuitive interfaces	<ul style="list-style-type: none"> <li>• Voice recognition and touch-screen visual interfaces mitigating challenges of multilingual and illiterate communities</li> </ul>
	Increased processing power	<ul style="list-style-type: none"> <li>• Modern smartphones contain processing power comparable to PCs of only a few years ago</li> <li>• Mobile phones becoming “all-in-one” devices capable of serving communication, transaction and data management needs (e.g., can serve as “card”, “POS” and record keeping simultaneously)</li> </ul>
	Geolocation tracking capabilities	<ul style="list-style-type: none"> <li>• More effective targeting and tracking services to optimize operations and supplement governance structures</li> </ul>
	Improvements in power storage	<ul style="list-style-type: none"> <li>• Off-grid recharge developments</li> <li>• Improved battery life</li> </ul>
	Falling costs	<ul style="list-style-type: none"> <li>• Mass production and operating system competition driving decline in entry points for smart phones, now less than US\$100 retail for unlocked versions (lower when carrier subsidized)</li> </ul>

Source: Bazaar Strategies LLC

Table 6: Key ICT developments - continued

ICT Category	Important Developments	Benefits
Security	Biometrics	<ul style="list-style-type: none"> <li>• Fingerprint recognition on phones</li> <li>• Mobile phone-based photo capture and facial recognition</li> </ul>
	One-time passwords	<ul style="list-style-type: none"> <li>• Increased transaction security</li> </ul>
	Fraud management	<ul style="list-style-type: none"> <li>• Improved data sharing and analysis for rapid identification of malicious behavior</li> <li>• User-managed identification raising awareness of data usage</li> </ul>
Data Processing & Analytics	Open-source and more open platforms	<ul style="list-style-type: none"> <li>• Platforms such as Android offer a lower cost opportunity for localized development and sharing of solutions and development</li> </ul>
	Crowd-sourced data sharing and analytics	<ul style="list-style-type: none"> <li>• Increase in specificity of market data, speed of gathering</li> <li>• Introduce grassroots governance mechanisms to reinforce government oversight of financial services sector</li> </ul>
	Shift from IPv4 to IPv6	<ul style="list-style-type: none"> <li>• Exponential increase in unique identifiers to cover all users, devices, and even collateral/assets</li> </ul>
	Business intelligence and predictive analytics	<ul style="list-style-type: none"> <li>• Ability to assemble incomplete data from disparate sources and derive increasingly targeted insights on new product needs and fraudulent patterns</li> </ul>

Source: Bazaar Strategies LLC

## **Opportunities for ICT to Advance Africa's Finance Sector Goals**

Countries in Africa have much to gain by examining how and where ICT advances can be applied to overcome long-standing financial services sector challenges. Already, a wealth of information is available for policy makers, particularly on mobile money and mobile banking strategy. Governments can also learn from such sources as the mobile communications industry ([www.mobilemoneyexchange.org](http://www.mobilemoneyexchange.org)) and the World Bank's CGAP and IFC Access to Finance teams. Appendix 2 provides a list of mobile money initiatives in Africa which are being monitored by the Mobile Money for the Unbanked program of the GSMA.

Others have explored more broadly the state of financial services sector infrastructure (IFC, 2009),<sup>11</sup> but have not explicitly examined the state of ICT investments. Table 3 below offers an examination of where ICT developments can play a significant role in addressing the financial services sector challenges summarized earlier in the report.

Table 7: Opportunities for ICT to help address financial services sector challenges

Financial Sector Development Challenges	Opportunities for ICT to help address financial services sector challenges				
	Data Storage and Sharing	Data Transmission	Device Advances	Security	Data Processing and Analytics
<b>Consumer/End User Challenges</b>					
Transient populations	√	√	√	√	√
Remote populations		√	√		
Understanding of consumer behavior and makeup	√		√		√
General literacy			√		
Financial literacy			√		
Trust of banking institutions (exposure and history)					
Capital access (SME/MSME)					√
<b>Governing/Regulatory Challenges</b>					
Lag of regulation to keep up with technological pace	√				√
Documentation requirements			√	√	√
Prioritization of financial inclusion					√
Limited regulatory framework for MFIs					
Political interference	√		√		√
Non-business friendly environment					
Inadequate client protection	√		√	√	√
Weak legal infrastructure	√				√
<b>Market Maturity Challenges</b>					
Provider interest			√		√
Weak industry voice	√				
Cost of established/conventional practices	√	√	√	√	√
MFI single product approach			√		√
Interoperability, network cooperation	√	√	√		√
Cost of established/conventional products	√	√	√	√	√
Insufficient infrastructure	√	√	√	√	
Poor/abusive business practices	√		√		√
Exposure to poor/unbanked markets/customers			√		√
<b>Underpinning Financial Systems</b>					
Backend operations at smaller banks and MFIs	√				
Availability of credit bureaus	√		√	√	√
Collateral registry	√			√	
Real-time payment processing/settlement (T+ seconds)	√	√	√		√
Broader international banking integration	√	√			

Source: Bazaar Strategies LLC

### *Cloud computing and software-as-a-service*

For small banks and microfinance institutions that have not been able to invest in or maintain their own management information systems (MIS), their limited progress may turn out to be an advantage. With the broader acceptance of cloud computing technologies and software-as-service business models, these firms may now adopt solutions such as *Kopesha* (<http://www.paygsolutions.com/Kopesha.htm>) and *Mambu* (<http://www.mambu.com/>), offering the benefits of increased efficiency, accuracy, transparency, and reporting without an upfront investment, lengthy deployment period, or on-staff software development resources (Lyon, 2011).<sup>12</sup> Whether MFIs adopt cloud-based solutions or opt to use free open-source solutions managed internally, these institutions can choose to supplement their infrastructure with software-as-service components such as *Kopo Kopo* ([www.kopokopo.com](http://www.kopokopo.com)), now in use in Sierra Leone and Kenya, to provide the needed connections between these solutions and mobile banking and payment capabilities.

Governments and intermediaries too can look to cloud-based solutions for introducing commonly needed supporting systems such as collateral registries, credit bureaus, and identification systems. India has embarked on one of the most ambitious efforts to date for providing identification for the poor by introducing the cloud-based Unique Identification card (UID), a unique identifier solution available to all financial and other relevant service providers (UIA of India, 2010).<sup>13</sup> India's ambitious five-year plan aims to provide identification for an estimated 500 million Indians will remove an important barrier to opening standard bank accounts.

### *Data Transmission*

Africa's relatively low rate of Internet penetration and the high cost of Internet service have restricted use of ICT in the financial services sector in many nations. New initiatives to increase access through fiber or satellite could significantly ease these barriers. In the area of satellite Internet, O3b Networks has raised over US\$ 1.2 billion from major investors Google, the Development Bank of Southern Africa and HSBC among others to provide a new fiber-quality, satellite-based, global Internet backbone for telecommunications and Internet service providers in emerging markets. Ubiquitous Internet access will be critical if Africa is to successfully apply cloud-based services to individual accounts or shared financial systems such as collateral registries and credit bureaus. Other backbone fiber initiatives, notably one driven by MTN, offer critical international access to the Internet for many African nations, although they cannot simultaneously address the distributed and rural needs as satellite networks can.

### *Device advances and security*

The most simple mobile phones are already valuable for the basic voice and texting capabilities that have introduced millions to payment and savings services. Now, more robust capabilities are gaining rapid adoption in the form of affordable smartphones. Devices with touch screens and cameras, affordable only to the wealthy only a few years ago, have seen dramatic price drops that will continue thanks to rapid ICT improvements, the mass scale of sales and greater competition. They offer intriguing possibilities for illiterate consumers who will benefit from more intuitive visual applications and instructions.

These same consumers, lacking traditional means of identification, can be offered biometric solutions such as facial recognition for mobile financial services using a simple phone camera. Today, Google's free image recognition cloud-based service, Google Goggles, has the capacity to identify individuals by comparing an individual's picture to any available image on the Internet (or, dedicated identity registry). Although Google has opted not to utilize the facial recognition capability, a governing body with authority to do so may choose otherwise for their nation.

### ***Data Processing and Analytics - The Gateway Financial Innovations for Savings (GAFIS)***

Unbanked consumers and micro/small businesses across Africa have a number of common, informal financial practices in lieu of conventional financial services. There is need to understand how informal practices are conducted and translate these into solutions where new customers can readily adopt formal services that meet their unique high-turnover, low-cash volume needs. A key initiative to tackle this challenge is the Gateway Financial Innovations for Savings (GAFIS - <http://www.gatewaytosavings.org/objectives.html>) project sponsored by The Bill and Melinda Gates Foundation and Rockefeller Philanthropy Advisors. GAFIS is aggregating and analyzing large amounts of transactional data with participating banks on both the demand-side of consumer behaviors, building on the seminal work, *Portfolios of the Poor*, and on the supply-side by examining banks' operating costs. This effort will result in more nuanced and relevant insights for designing relevant, useful financial products for the financially excluded.

### **Conclusion**

While the financial services sector of Africa faces numerous challenges to expanding financial inclusion and introducing the financial systems that can benefit all consumers and small firms, ICT advances have reached a stage of maturity to support significant financial services sector development. The next chapter assesses which African financial services sector initiatives can be best scaled through strategic ICT investments and the challenges such initiatives could face.

## **Chapter 3: Opportunities and Challenges to Finance Sector ICT Application**

Where are the greatest opportunities to apply ICTs to Africa's financial services sector and what are the challenges that exist to accomplish this objective? The following reviews opportunities where ICT can scale financial services sector development, offers a framework for evaluating and prioritizing these opportunities, and identifies the challenges to realizing this goal.

The previous chapter offered an overview of Africa's financial services sector development and trends in ICT development, with particular attention paid to the objectives of household financial inclusion and the needs of micro and small businesses. This chapter will explore opportunities to scale successes in financial services sector development through ICT approaches by:

1. Showcasing novel/key initiatives that are breaking traditional barriers to financial services sector development.
2. Examining these initiatives to assess the greatest opportunities to deploy ICT strategies to scale these initiatives across the continent.
3. Identifying remaining challenges that will hinder the use of ICTs to scale these solutions, and discuss how Africa's policy and development communities can devise policies and strategies to overcome these challenges.

As technology becomes more affordable and mobile phone usage spreads to the most remote corners of Africa, it is important to understand the challenges that must be overcome before ICTs can be fully leveraged to propel financial services. The constraining factors are as diverse as the African continent itself, but they are by no means insurmountable.

End users are confronted by an array of challenges in the areas of payment systems, product design, and access to loans. The full potential of mobile technology to provide services beyond simple voice and data communication can only be tapped with better orchestration of the overall system. End users will benefit when solutions are found for geographically complex liquidity management issues, the narrow menu of products, rampant fraud, fenced-off systems, the lack of consumer protection and the scarcity of credit lines for SMEs.

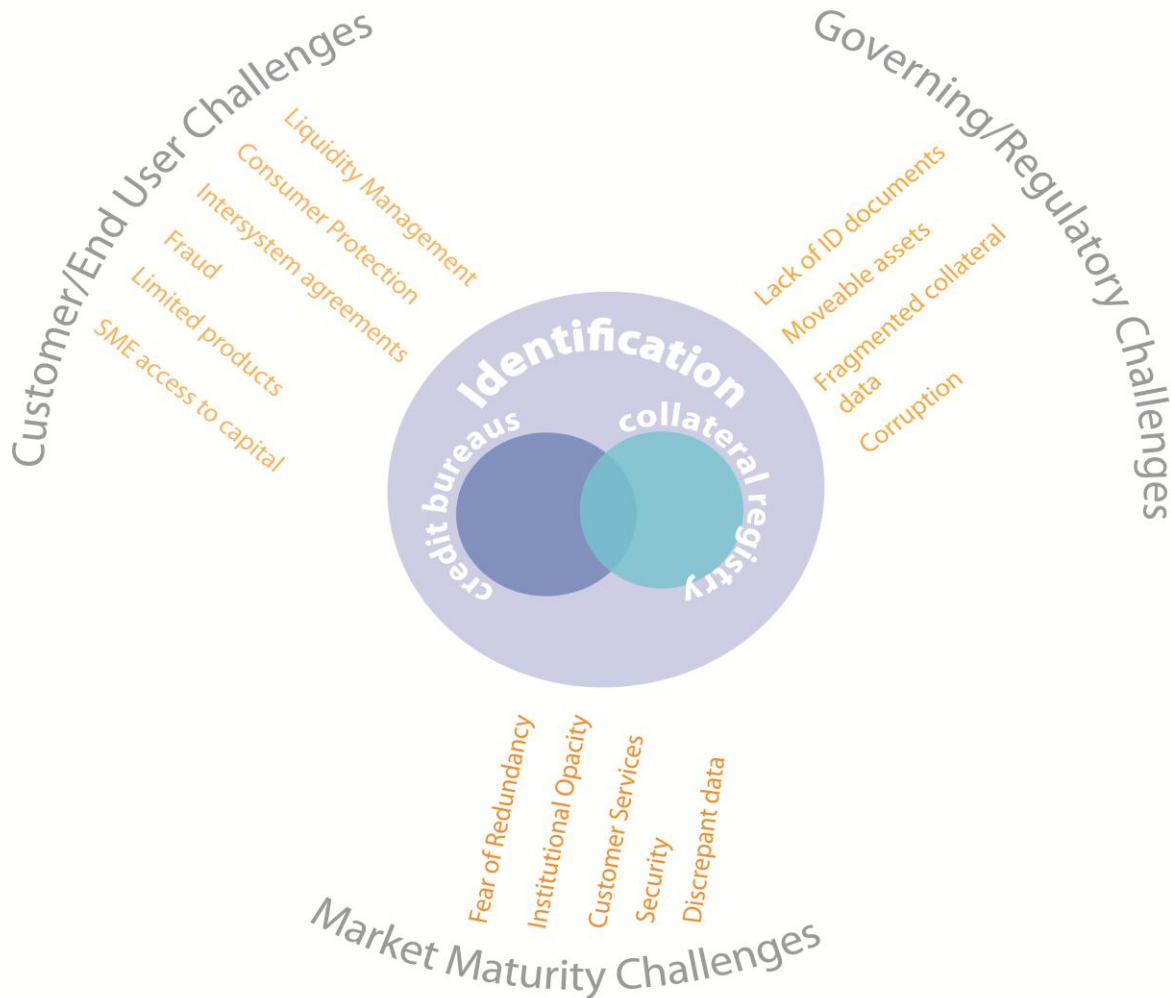
Many countries in Africa support financial inclusion in principle but sometimes hesitate to follow through with action. ICT regulations are often outdated, slow to overhaul, or entirely absent. Lack of political will does not explain why regulations and the governing bodies that implement them are not more responsive to market conditions. Low awareness, more pressing problems such as epidemics or hunger, insufficient resources, and lack of experienced professionals all count among the reasons. Core prerequisites such as issuing IDs or considering alternatives, credit bureaus instituting the legal bases for centralized databases for collateral registry, and recognizing movable assets as possible collateral are crucial steps that precede any offer of secure financial services. These factors have direct bearing on the credit market for SMEs, without which any development is inconceivable. Ongoing SIM registration drives across Africa will only yield limited results in building customer identity information unless they are executed more efficiently. The consequences of failing to produce official identity documents or summarily disconnecting millions of phones severely undermine the gains of mobile telephony.

The right attitude and customer readiness to embrace services offered on mobile platforms does not lead directly to financial inclusion. Most market players, including Mobile Network Operators (MNOs), banks and ICT companies, prefer to operate in environments that promise high return on investments. Markets will have to mature to the point where the service infrastructure is plug-and-play. For one, software as a service (SaaS)

licenses such as Grameen’s *Mifos* encapsulate a strong value proposition for Africa. Proven to be cheaper and superior elsewhere in the world, the platform provides software and database services hosted by remote central services that manage data (i.e., cloud computing). However, there are serious reservations regarding SaaS, such as security, fear of redundancy by client institutions, and customer service. The SME credit market is also hindered by the lack of coordinated credit bureaus with accessible databases and the inability to repurpose available customer data derived from mobile phone usage.

Scale is also critical to the overall success of financial services. Scale cannot be attained without accommodating the needs of various demographics (e.g., income levels), lack of IDs, and diverse usage models (individual and shared). Service providers and financial institutions are willing to make ICT investments only when they have an accurate picture of the credit market, including changing government regulations. A clear path that ramps up the delivery of diverse and relevant products is a minimum requirement to reaching a sustainable scale – a factor that Africa has to tackle very soon.

**Challenges to Financial Services in Africa with Implications to ICTs**



## Part I. Key initiatives

Building on the analysis of key challenges to financial services sector development across Africa, this chapter examines notable cases to address:

- Consumer/End User challenges
- Governing/regulatory challenges
- Market Maturity and Underpinning Infrastructure Challenges

Within these challenge areas, we look at the following notable initiatives:

Challenge Area	Key Initiatives
Consumer/End User challenges	<ul style="list-style-type: none"> <li>• Transactional friction and retail payments</li> <li>• New Product Development (savings, lending, MIS options)</li> <li>• SME access to capital</li> </ul>
Governing/regulatory challenges	<ul style="list-style-type: none"> <li>• Identification</li> <li>• Collateral registry</li> </ul>
Market Maturity and Underpinning Infrastructure Challenges	<ul style="list-style-type: none"> <li>• SaaS for MFIs</li> <li>• Credit bureaus</li> </ul>

### Consumer/End User Challenges

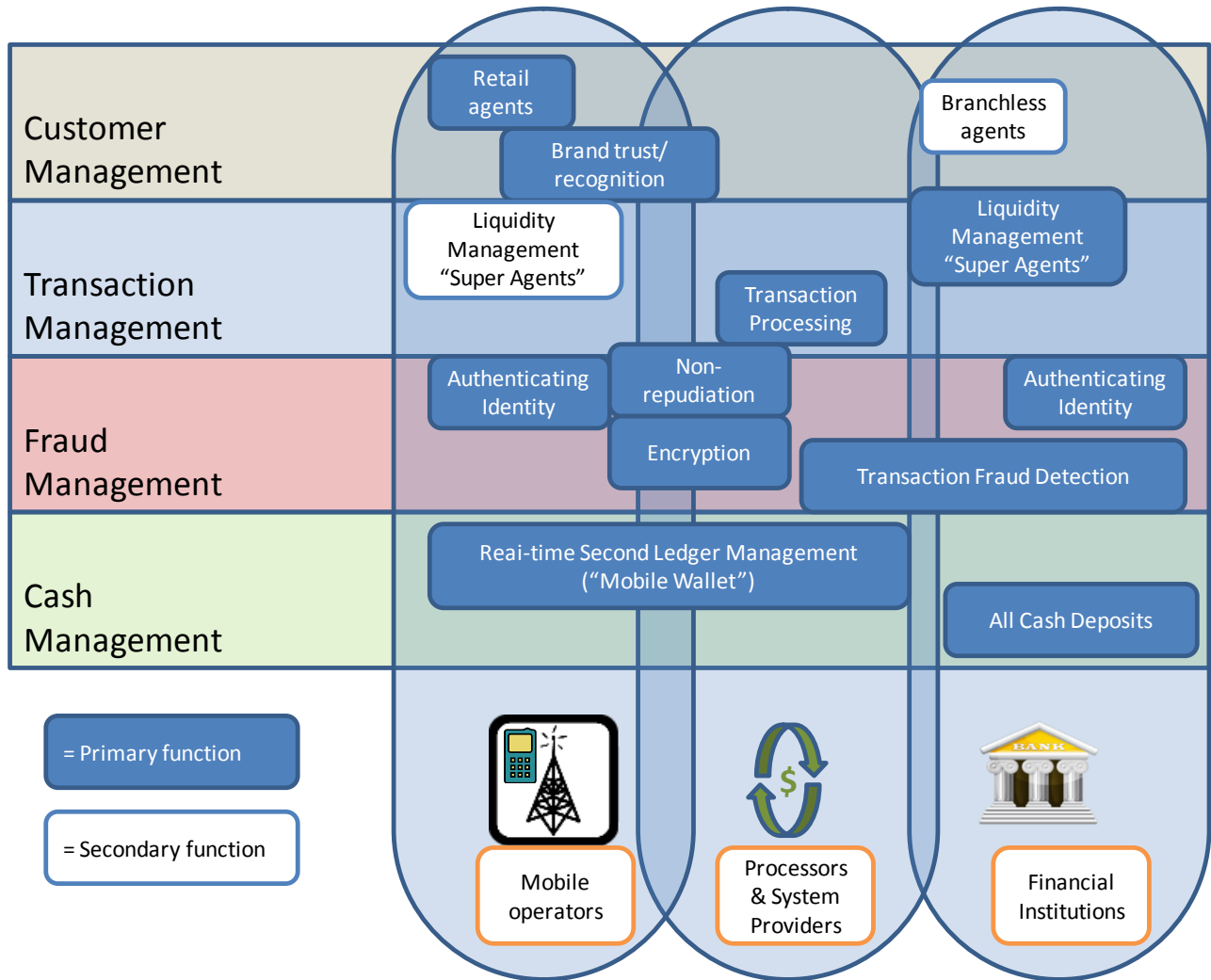
Many of the efforts to address consumer/end user financial service challenges have focused on expanding access to the most fundamental services – transactional capabilities and simple market information services that can utilize the growing penetration of mobile phones. As these core capabilities are rolled out, innovators are trying to: 1) build upon consumer acceptance of these new models, and 2) leverage the transactional capabilities to introduce a more diverse portfolio of financial services. This section examines these key initiatives and their challenges.

#### *Transactional friction and retail payment solutions*

Before many consumer financial services can be introduced to financially excluded populations, a platform for cost-effective payments and transfers must be in place. Whether it is micro-insurance schemes, micro-lending, or savings products, all need methods for making regular payments or deposits in ways that can reduce complexities such as physical proximity to financial institution branches or the identification requirements for opening and using accounts.

Payment systems that utilize the mobile phone network and mobile phones have received the greatest attention and investment in recent years. As mobile penetration rates in most African countries have risen to the point where even the poorest are gaining access to mobile phones, even if they may not own them directly, these networks are able to serve multiple payment objectives. A mobile phone can act as both the user identification and authentication vehicle, through a combination of phone or account number and a personal identification number (PIN) as a password. It can also serve as the point of sale terminal. Because of this multidimensional capability, many firms and governments are seeking ways to extend the investment so many consumers have already made to acquire a mobile phone in order to deliver financial services.

Figure 1: The Mobile Banking Ecosystem



The mobile banking ecosystem is a complex one, as two traditionally distinct and entrenched industries, financial services and telecommunications, collide. Each has its functional strengths. Mobile operators have experience in handling high-volume, low-value transactions. Banks are skilled at managing the risks of fraud and cash management. Supporting both are a number of innovative transaction processors and system providers that bridge these two industries. Each has regulatory overseers, with telecommunications firms required to protect consumer privacy and banks required to protect their finances and the health of the overall financial system. This collision of industries is resulting in several innovative business models. The business models for mobile payment operations take one of three forms:

- 1) Bank-led systems
- 2) Mobile operator-led systems
- 3) Hybrid systems

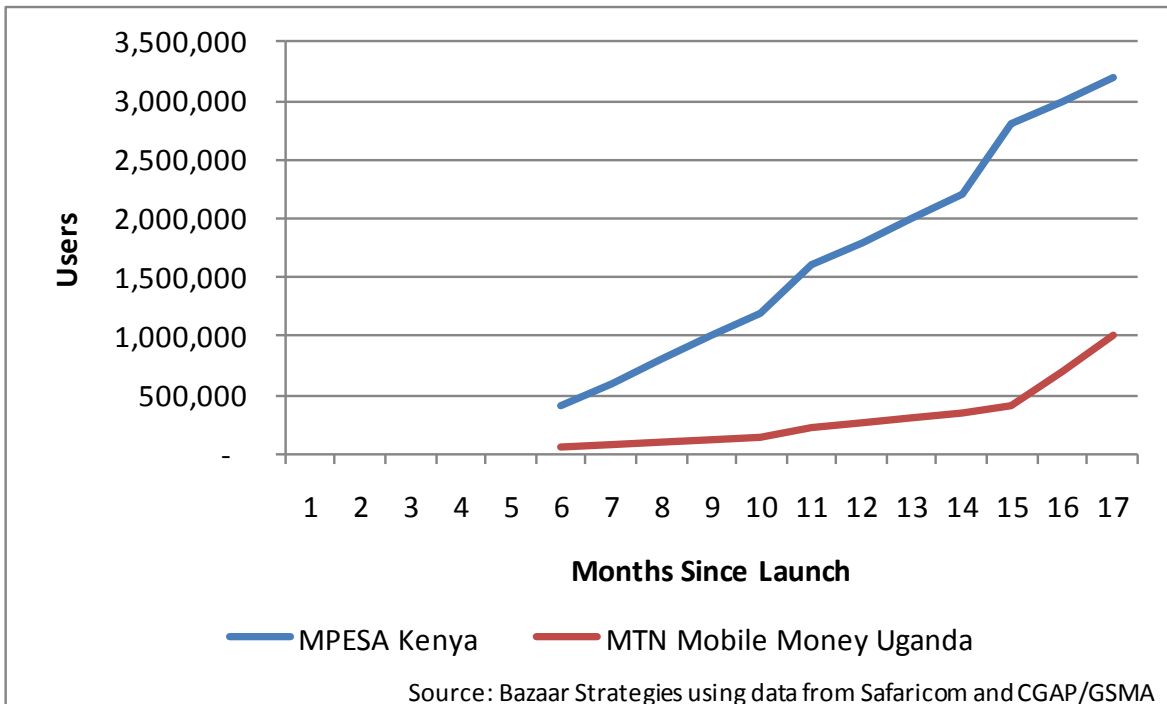
In almost all cases, funds are held in licensed banking institutions. The only major exception to this is the postal service model. In many countries the postal service has been a widely accepted vehicle for transferring domestic remittances. Some countries, Gabon most recently, recognize that consumers are comfortable with this practice

and have introduced stronger savings products tied to these transfers. Rules governing where those deposits are held vary, though there are typically strong ties to state-operated banking institutions.

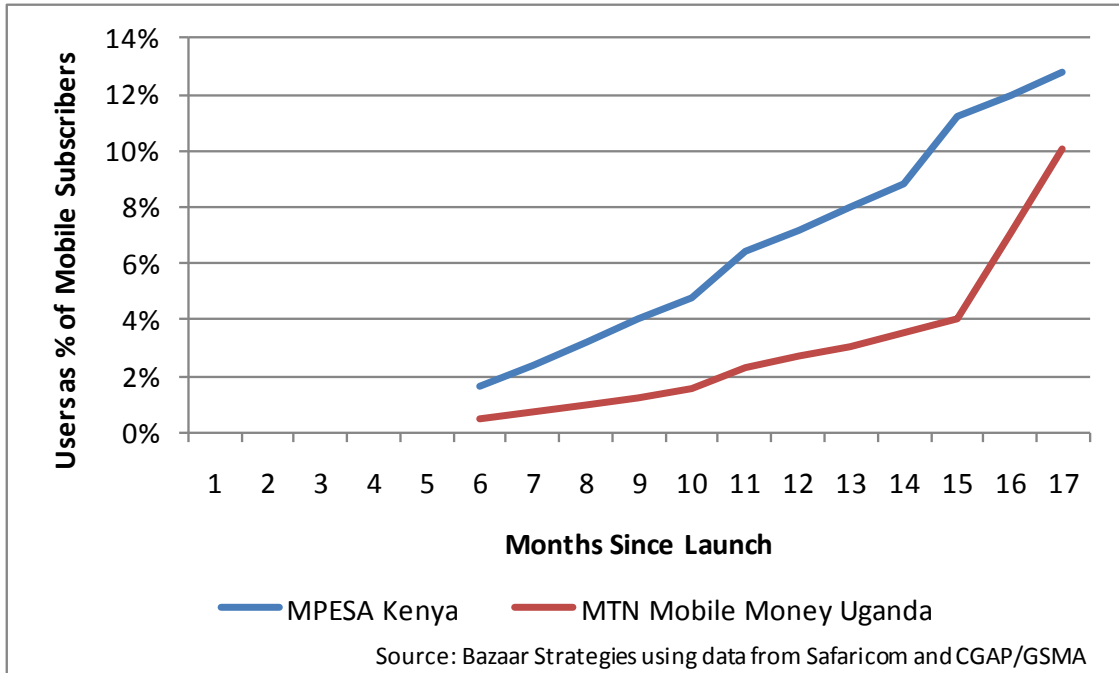
The largest distinction among the primary models is whether mobile payment accounts are tied directly to a bank’s account management structure or whether supplemental system software is used to manage a second system of “sub-accounts” that are tied to a formal bank account where funds are stored. The rationale for managing a second system of accounts is driven by time delays of conventional retail payment clearing and settlement systems. Even the most advanced “real-time” clearing and settlement systems operating in many countries still involve a 6-12 hour delay. This creates a challenge for the low volume and high turnover of cash activity among poorer populations, requiring systems that can better compete with the easily exchangeable properties of cash. The currently closed payment systems of mobile payments overcome this hurdle by enabling clearing and settlement of payments within minutes, if not seconds. Both bank-led and mobile operator-led models rely on the solutions of third party payment software and service providers who are either contracted to one institution or the other. In some less common cases, a bank and a mobile operator have established a joint-venture that owns and operates this software vendor relationship.

Can promises be realized?

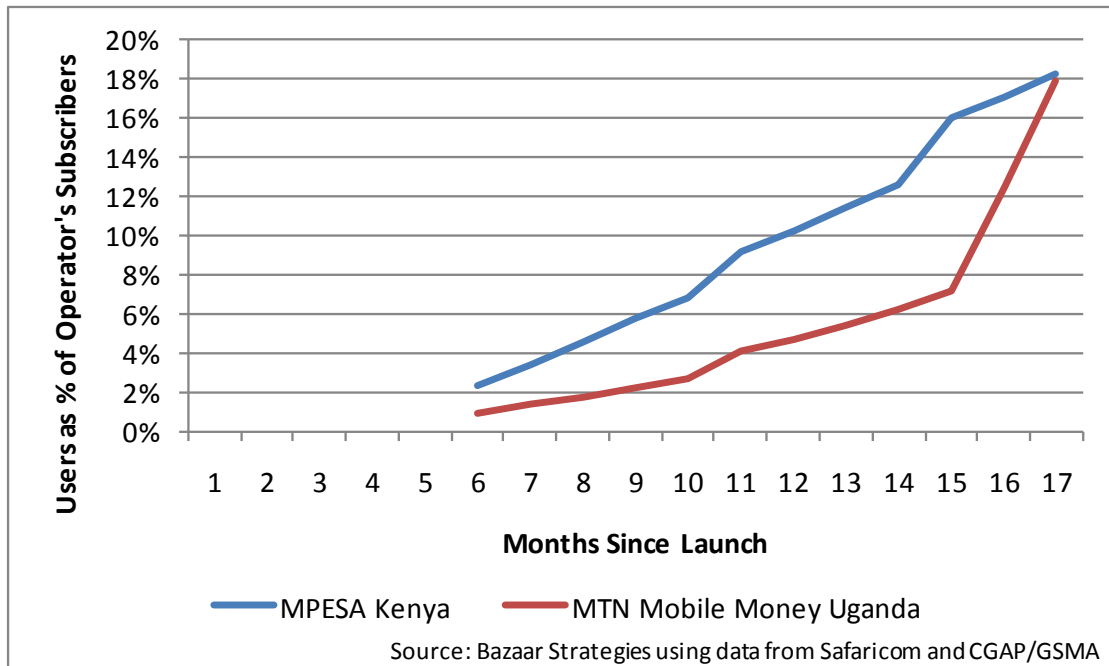
Much has been published on the promises and experiences thus far of leading mobile payment solutions in Kenya and South Africa, and several other nations, including Uganda, Tanzania, Ghana and Senegal, are following this path. The supplemental case studies of Kenya and Senegal, below, offer further insights on these efforts and how they are evolving. Due to the extraordinary success of Safaricom’s M-PESA product in Kenya, it has become the benchmark by which other mobile money services are measured. For example, some might compare the growth of mobile money adoption in Kenya to recent experiences in Uganda and ask if Kenya is an aberration that cannot be copied:



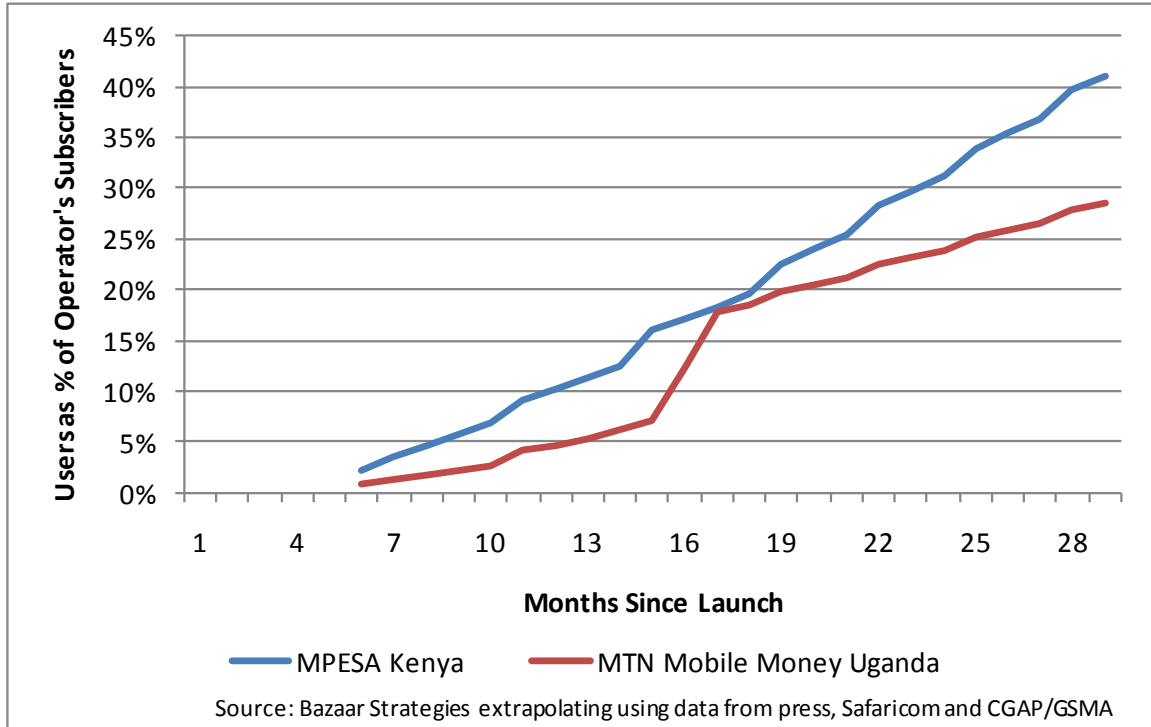
The answer to the question is not so simple, however. It also might be more appropriate to ask what level of penetration and usage is necessary for a mobile money solution to achieve the critical mass that makes it self-sustaining? It is also useful to consider the relevance of data within the context of each country's environment. If the M-PESA and MTN Mobile Money examples above are considered on the basis of penetration rate among mobile phone subscribers, the results looks quite similar:



If mobile operator market share is also factored into the equation, the race looks even tighter:

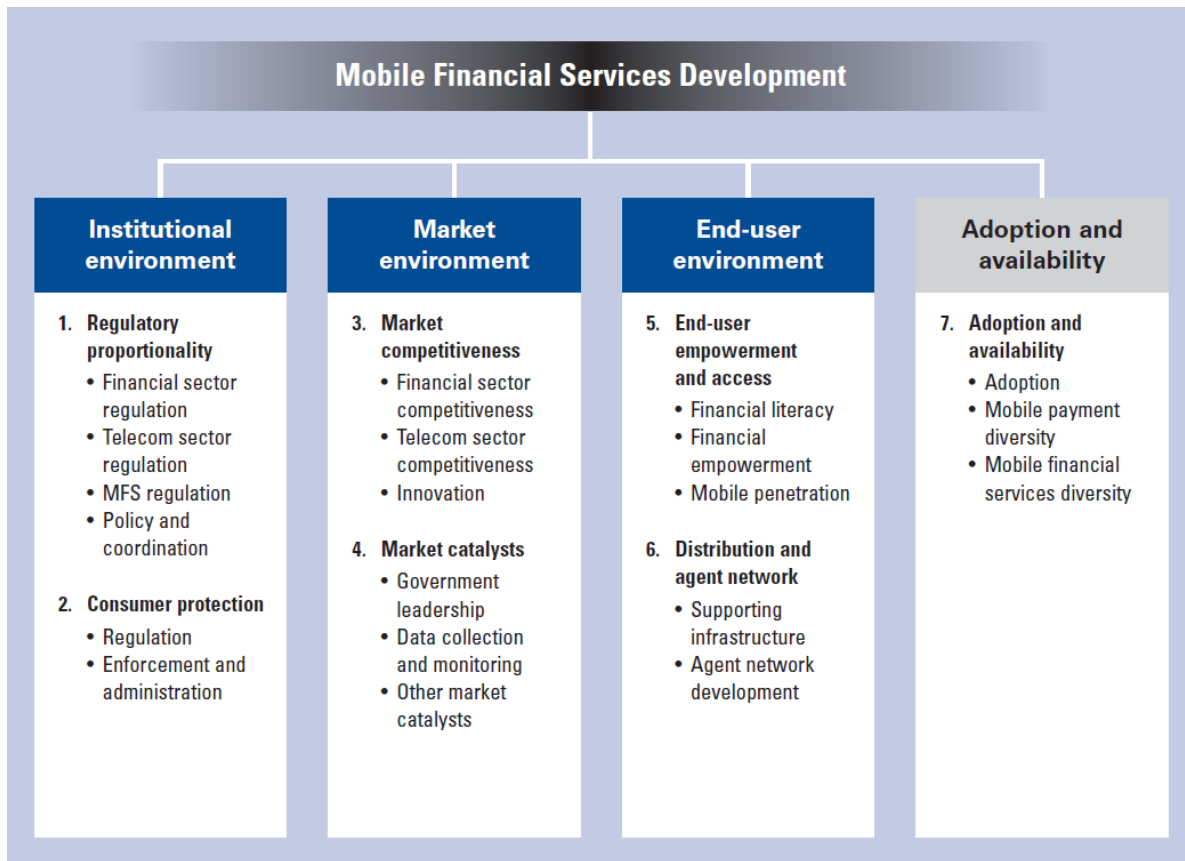


Beyond assessing what each country must achieve to reach the critical mass for sustainability, judging “success” becomes increasingly subjective. And with so many variables influencing success, it may not be wise to use a single metric of success for all markets. Every market will go at its own pace. For example, if data from the previous table were expanded to assess a longer timeline, the conclusion drawn may be quite different:



While metrics of success may vary, work is underway across many of these initiatives to identify key elements and lessons to guide other nations seeking to replicate their successes and avoid their setbacks. The World Economic Forum has recently published a report on the state of mobile financial services worldwide and offers an initial framework of key elements of mobile financial service development based on this assessment (WEF, 2011).<sup>14</sup> According to the document, the building blocks of functional mobile financial services include the presence of institutional, market, and end-user environments that are conducive to sustained adoption.

Table 1: World Economic Forum Assessment of Mobile Financial Service Key Elements



Source: World Economic Forum.

### Remaining challenges

While the introduction of these efficient mobile payment services is now leading to new product development and financial service diversification, challenges still remain for rolling out even these fundamental services. The greatest challenges that could be addressed by African policy makers and the investment community include:

#### Liquidity management

Understanding mobile payment solutions and learning how to use them will not completely tackle the problem for users. Challenges will remain until the solutions and supporting systems have reached a fuller state of maturity. Perhaps one of the greatest complications, as indicated by lessons from Kenya, is the matter of liquidity management (Jack and Suri, 2011).<sup>15</sup> Domestic remittances sent from urban areas to rural locations constitute the primary flow model for M-PESA in Kenya. From a cash management perspective, this creates an imbalance whereby rural locations are largely withdrawing cash as opposed to depositing. The result is that cash in/cash out agents in rural regions can regularly exhaust their available cash. While there is little indication that this is leading to customer abandonment of the M-PESA service, it does present a key area of friction that should be addressed.

The table below is an excerpt from Jack and Suri's 2011 study of M-PESA usage in Kenya examining barriers to withdrawing money from M-PESA.

Table 2: Delays to withdrawing money from M-PESA

	Round1			Round2		
	Non-users	Users	All	Non-users	Users	All
<b>Number of households</b>	1,143	873	2,016	629	1,387	2,016
<b>Share of total</b>	0.57	0.43	1.00	0.31	0.69	1.00
<b>Income and wealth</b>						
<b>Annual Household Expenditure (KSh)</b>	172,181 (221,960)	305,684 (434,581)	230,005 (337,712)	118,452 (100,437)	245,105 (240,852)	205,599 (215,626)
<b>Assets (KSh)</b>	77,706 (299,111)	209,769 (576,102)	134,910 (445,713)	55,652 (222,091)	166,478 (715,700)	132,187 (609,538)
<b>Wealth index</b>	-0.571 (1.529)	0.747 (1.826)	0.000 (1.788)	-0.929 (1.464)	0.416 (1.828)	0.000 (1.832)
<b>Other characteristics</b>						
<b>Share of households with at least one cell phone</b>	0.52	0.92	0.69	0.39	0.92	0.75
<b>Share of households with at least one bank account</b>	0.34	0.71	0.50	0.23	0.65	0.52
<b>Share of the unbanked population in each category</b>	0.75	0.25	1.00	0.50	0.50	1.00
<b>Share of the banked population in each category</b>	0.38	0.62	1.00	0.14	0.86	1.00
<b>Share of rural population in each category</b>	0.71	0.29	1.00	0.41	0.59	1.00
<b>Share of urban population in each category</b>	0.47	0.53	1.00	0.24	0.76	1.00
Notes: All figures reweighted accordingly. Standard deviations in ( ).						

Source: Jack and Suri, 2011.

As more users adopt M-PESA and mobile phone penetration increases in rural areas, this unevenness will be mitigated as individuals have less reason to convert digital value to physical because of the digital payment capability the system affords. In the interim, service providers have developed a range of solutions to expedite delivery of cash, including fortified delivery vehicles and “super” agent cash distributors.

### Governance and consumer protections

Perhaps the greatest challenge for the adoption of mobile payment and financial solutions from a governance perspective is to the matter of identification documents and procedures required to open an account. As a critical topic, this is treated separately in the section on governance.

Other barriers that have received less attention relate to deposit insurance for smaller mobile money accounts and the need to govern against illegal surcharge/fee practices. In the case of deposit insurance, bank-led models that align mobile money accounts to established account systems are usually insured, so there is need to protect sub-accounts, too.

### Inter-system interconnection agreements

A significant challenge to mobile payment and banking adoption that is only beginning to receive attention is the transition from closed-network mobile payment systems to interoperable open-network systems.<sup>16</sup> As with other network-based transaction products and services, there is a constant market tension between product differentiation to attract customers and reduce churn on one hand, and expanding the number of users and transactions. As with card solutions and Automated Teller Machines (ATMs), institutions first introduce proprietary solutions as a means of differentiation and churn reduction. Once most institutions have adopted similar solutions and the product

becomes commoditized, institutions negotiate inter-operability agreements to benefit from the incremental revenues of cross-network payments. The challenge for mobile financial services is that there are typically 3-5 mobile operators in each market that have interconnect agreements for calls but not mobile payments. In areas with concentrated populations, this may present less of a challenge, as users with multiple options still make use of a closed network solution. In rural areas, however, this issue is more complex. It effectively creates a scenario equivalent to members of communities being forced to use multiple currencies and incurring exchange fee costs each time a transaction occurs with a community member who uses a different currency.

For policy makers, this raises a question: should requirements mandating interoperable solutions be imposed? It is not a simple question to address. Consumers on both side of a transaction expect the same level of security and performance as they have come to expect of their current solution provider. Similarly, central banks must be assured that all participants in the transaction offer the protections necessary to reduce systemic risk. A second question refers to the mechanisms that ensure fair and competitive pricing in cases where interconnection agreements are already in place. This question is similar to the ongoing issue of mobile roaming rates: what are fair and reasonable rates that service providers may charge without abusing their utility-like position?

### Fraud

Naturally, interoperability allows for transaction volume increases for all service providers. Unfortunately, interoperability also allows more possibilities for fraud. The more transfer points and actors engaged in the ecosystem, the more opportunity there will be to find cracks in service provider defenses. And, as the delivery channels for these payment services combine old and new practices, the methods and means of fraud will also increase. It will require specialists in fraud detection and management, including security firms serving computing environments and large-scale payment processors.

In addition, the donor community can reduce risk for all market participants by investing in innovative models and technologies that fit the mass-distributed mobile financial service ecosystem. Some initiatives have begun to look at how peer networks can collectively self-govern. An example is Billguard,<sup>17</sup> a firm that has created a shared credit fraud reporting system whereby consumers can view their own transaction activity and share fraud activity with the broader community. A simpler version of this model has been deployed in mobile financial services in the form of text alerts to subscribers when a transaction occurs, which is suitable for the African market. Going forward, the growing geolocation capability in mobile phones could be used to detect fraudulent transactions occurring in a location different from the location of the consumer's handset.

### ***Product diversification***

A growing number of efforts are underway to encourage the development of new financial service products tailored to the needs of Africa. Both publicly- and privately-funded product development incubators are springing up across the continent in places like Egypt, Ghana, Kenya and South Africa. They are backed by strong partners with deep experience in technological development (e.g., Google and Nokia) and considerable expertise in consumer needs (e.g., InfoDev and Frog Design). Below are some of the more promising efforts:

#### Expanding access beyond mobile phone owners – Movirtu<sup>18</sup>

Movirtu is taking on the challenge of delivering mobile financial services to consumers without a mobile phone. Their cloud-based solution affords consumers the opportunity to enroll for services and get a “virtual” SIM so that consumers may use any available mobile phone to login to their own accounts and perform their own dedicated transactions.

#### Mobile micro-insurance products – Microensure

Microensure, recent winner of a Financial Times/IFC award in financial service innovation for the bottom of the pyramid,<sup>19</sup> has introduced a variety of micro-insurance solutions via mobile phones. Its product line includes life insurance in Ghana, farmers’ crop insurance in Tanzania, and health insurance in India. Expect to see greater differentiation as these proof points gain greater attention.

#### Beyond payments – SME financial management – Frogtek

SMEs require more than payment capabilities to maintain and grow their business. There are difficult tasks of managing inventory and optimizing limited cash flow to maintain the appropriate stock of goods. Currently available in Latin America, Frogtek is introducing innovative financial products for the poor by utilizing applications, some available as free open-source software on the Android mobile platform, to deliver a greater range of products tailored to the needs of SMEs. SMEs can more easily manage their inventories and operate a simple cash register through a smart phone application. As smart phone and tablet hardware prices decrease, the Frogtek platform will have broad demand among both SMEs and MSMEs.

### **Remaining challenges**

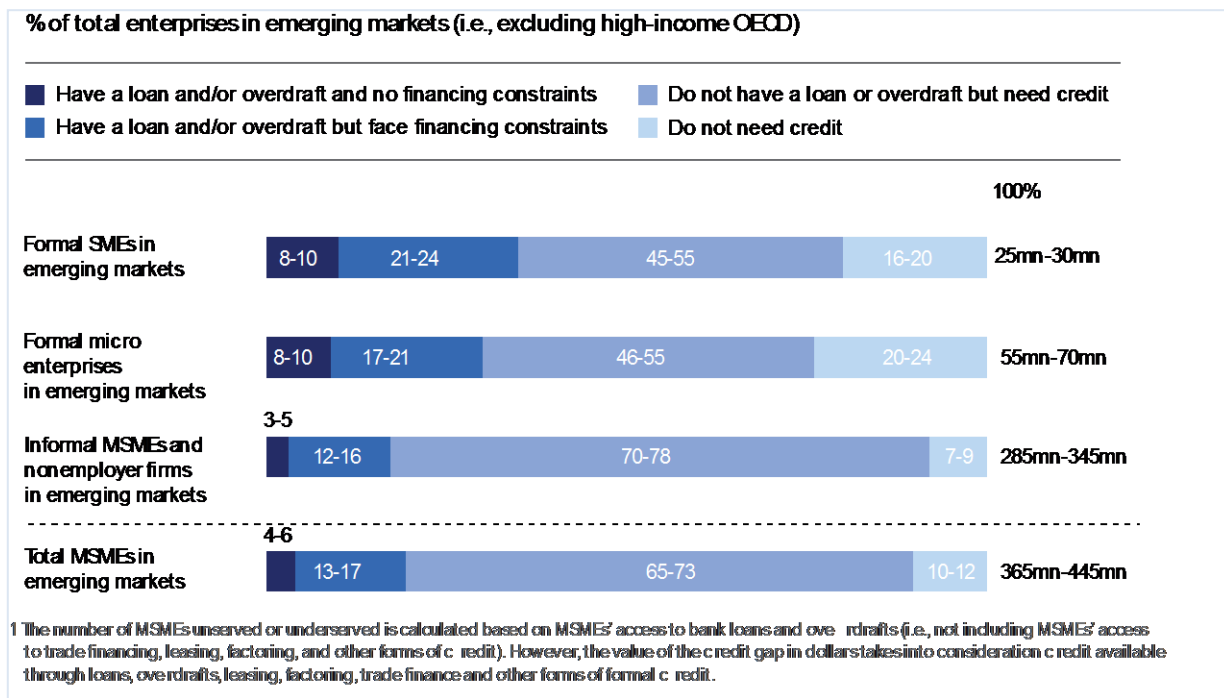
Despite hope for these advances, much more is needed to better design and scale consumer and SME financial products for African nations. Knowledge about desired features and specific habits of African users is one of the greatest challenges. One innovative approach seeking to address this challenge is the Gateway Financial Innovations for Savings initiative sponsored by The Bill and Melinda Gates Foundation. Through this initiative, participating banks are working with experts organized by Bankable Frontier Associates to gather and analyze data on consumer practices and needs. This data will then serve as the basis for generating new product ideas. Participant banks represent Africa, Latin America and Asia, with results anticipated in coming years.

**SME access to capital**

Access to capital presents one of the greatest challenges faced by SMEs trying to grow. The G-20 Financial Inclusion Experts Group, SME Finance Sub-Group recently undertook a major study, produced by the IFC, to understand the size and nature of this challenge and to offer policy and investment guidance.<sup>20</sup> It is already clear that the role of SMEs is critical to national economies, contributing up to a third of GDP and supporting 45% of employment. With greater access to capital, established firms could grow and more SMEs could join the market. The report suggests SMEs are only a third as likely to obtain a bank loan as a medium-sized enterprises, and less than half as likely as a large firm. Even for those SMEs with a banking relationship, many still do not have access to credit. Roughly 75% of formal SMEs have a deposit or checking account, but only a third have access to credit.

The following assessment from the International Finance Corporation (IFC) and McKinsey Consulting, while covering the situation in developing countries worldwide, is indicative to the capital access challenges in Africa:

Figure 2: SME and MSME use of financial institution loans or overdrafts and financing constraints<sup>21</sup>



Source: IFC and McKinsey Consulting

To meet the high demand for credit will be no small task, requiring significant innovation, notably among the least accessible rural MSME segments. A primary consideration is providing a low-cost model for geographically distributed populations, where ICT solutions have a distinct advantage. ICT, combined with innovative business models, has the potential to do for SME capital access what it is now beginning to do for consumer retail payments.

**Trends and opportunities**

Solutions and models are emerging. Some are explicitly intended for Africa's SME/MSME markets and others are being developed in other regions but could be applied to African markets. However, addressing the need will

require undertaking several interdependent solutions, some of which are discussed specifically in this paper. The interdependent needs are:

- Improving access channels
- Reducing risks through better borrower information (e.g., credit bureaus and banking systems for account management)
- Identification
- Improving collateralization

All of these items are addressed separately throughout Chapter 2 of this report. Given the technical complexity of putting in place many interdependent solutions, innovation is occurring within credit channels that seek to improve SME and MSME access to capital. These solutions tend to rely upon more traditional, informal mechanisms of assessing risk and deriving assurances, building on the group lending models of microfinance.

Kiva is one such example that leverages the relationships of microfinance institutions with MSMEs (often individuals), combined with a website that enables anyone with a credit or debit account to make payments through a PayPal account. Payments are targeted directly to a specific borrower endorsed by a participating microfinance institution. Kiva now is lending over US\$ 2 million each week to nearly 5,000 MSMEs with a 98.79% repayment rate. The funds are derived from nearly 25,000 individual lenders worldwide in a given week.<sup>22</sup> Since its founding in 2005, Kiva has attracted nearly 600,000 individual lenders and transferred over US\$ 220 million in loans.

Other relevant models that have not yet spread in developing-country settings are those supporting peer-to-peer lending. Prosper<sup>23</sup> is the most notable example. The online service allows borrowers to solicit loans directly from individuals. A second model, Profounder,<sup>24</sup> created by one of the founders of Kiva, combines lending with business-building tools needed by entrepreneurs. While neither of these solutions can be readily transplanted to a developing country setting, each offers valuable insights that may be applied to the needs of Africa's SME and MSME populations. Identifying ways to acquire informal knowledge about an SME proprietor, and to extend this information beyond the boundaries of a proprietor's direct relationships, could be as a step toward SME lending until more formalized credit bureaus are in place. In addition, combining SME knowledge and training strategies with payment capabilities and rewards for accessing credit may also be scaled via ICTs through local learning hubs.

## **Governing/regulatory challenges**

Governance and regulatory demands for developing Africa's financial services sector are in many respects the starting point for advances in the sector. Without transparent roles and responsibilities, commercial interests may decide the unknown risks are too high to make the sizable investments needed for building out networks. In the innovative models of mobile financial services, lack of clarity regarding the roles for financial institutions and mobile operators can cause market fracture or lead to redundant investments that are transferred as costs to the consumer.

Assuming that the fundamental need for regulations governing consumer protection and managing systemic risk are well understood, this report focuses on those areas specific to ICT and financial services. Specifically, we examine the challenges of enrolling citizens in identification systems and the potential for using mobile phones to address this challenge. We also explore the need for collateral registries that can be sponsored by the public sector and shared among all participants in a financial services sector.

### ***Identification through SIM Registration***

In fulfillment of global KYC (know-your-customer) requirements, generally referred to as Regulation of Interception of Communications Acts (which have as their main objective the prevention of criminal uses of communication devices), SIM registrations are ongoing all over the world. Providers in many African countries are rushing to finalize their registrations, often at a significant cost, before deadlines set by their respective governments expire. The process, in most cases, involves personal appearance by owners of mobile phones who register their SIM cards into safe databases by producing official identity documents, proofs of residence, and fingerprints or photographs. Such massive identification of customers is intended to discourage illicit voice and data transmissions (e.g., by terrorists, criminals, etc.) both globally and locally. The popularity of fast mobile money transfers adds yet another anxiety and urgency from a security perspective. While the SIM registration does not necessarily serve as the source of identification in and of itself (some form of national identity documentation or capture of biometric information offers this basis), the drive to register SIMs has provided an excellent opportunity to encourage citizens to get identification for fear of losing mobile phone services.

So far, a number of African countries have reached a near completion stage. Botswana leads the curve, having successfully registered 2,026,142 subscribers by January 2010, while Kenya had documented 13.8 million of the 16.24 million total SIMs in public hands by the last quarter of 2010.<sup>25</sup> In Tanzania,<sup>26</sup> operators proactively used the SIM registration process to bundle mobile money services among their offerings. Cote D'Ivoire, Egypt, Gambia, and Ghana are among the countries that are speeding to catch up. South Africa's final June 2011 deadline has passed, while countries like Liberia lag behind and Somalia may not join the effort. Zimbabwe took one of the most drastic of measures, deactivating SIMs that were not registered by the February 28, 2011 deadline and leaving about 30% of mobile phone owners without network connection.<sup>27</sup> Similar cut-off dates are expected to disconnect large numbers of customers in several countries.

The registration process has not been smooth throughout the continent. Several delays and extensions occurred. For example, in Nigeria, initial drives by service providers to register SIM cards were too complicated, prompting the Nigerian Communication Commission (NCC) to contract out the process of documenting over 80 million subscribers within six months. In Ghana, fraudulent documentation involving fake ID cards was encountered.<sup>28</sup> Below, the pros and cons of SIM registration in Africa are discussed in detail.

## **The Rationale**

### Establishing a Crime Database

Organized and petty crimes typically involve some form of communication. The crime rates in many African countries for things like theft and mugging are considerably high.<sup>29</sup> Building a database of communication traffic provides law enforcement bodies a new forensic technology to map criminal activities, as well as an opportunity to perform background checks. On a psychological level, the capability to link crimes to offenders may deter the use of communication devices to engage in illegal acts.

### Real-time Tracking of Illegal Activities

In Africa, loss of mobile phone devices is an everyday reality. Robbers snatch mobile phones in the streets and any exposed public spaces for sale in the black market. To date, only Kenya and South Africa have joined GSMA's IMEI database that blacklists stolen phones.<sup>30</sup> SIM registration gives subscribers and law enforcement officials the capacity to track lost cell phones. However, it does not completely prevent theft of devices, since SIM cards can be disposed of easily (whereas the IMEI number is unique to the physical handset). The other benefit of identifying SIM cards is tracking illegal activities in real-time and reducing the cost of lengthy investigations.

### Incentive to Obtain ID cards

Subscribers will have to obtain ID cards in order to maintain and use their accounts, regardless of their payment plans (pre-pay and post-pay). New and existing customers will have the incentive to acquire identification documents wherever they are available, which would allow them to use other services such as banking. Another plus is the fact that, if well-implemented, SIM databases can be used for tax-collection purposes or to guide national strategies on budgeting, elections, healthcare, etc..

### **Challenges**

Mobile phone subscription and voice traffic plummeted across Africa as countries instituted mandatory SIM registration. Providers like MTN, Vodacom, and Telcel lost a chunk of their customers in South Africa, Zimbabwe, Gabon, and elsewhere as a result. Although ARPU (Average Revenue Per Unit) dips can be remedied over time, their negative effect on both customers and companies is obvious.<sup>31</sup>

### Disadvantage to rural and urban resident who lack ID

Many Africans live in rural areas that are far from reliable infrastructures or government services. Mobile phones have reached many such regions, but the lack of official identification documents can be a problem. The absence of services, inconsistencies, corruption, long waiting periods, and confusion among citizens all stand in the way of getting ID cards.<sup>32</sup> In urban areas, most of which are crowded and suffer from acute shortage of housing, documenting mobile phone users presents a complicated challenge. Migrants often live in temporary rented rooms that are shared or sublet from others. Frequent moves and address changes are also very common, which makes producing proof of address very difficult, or impossible.

### Privacy and Confidentiality Issues

Juggling confidentiality and compliance with the law can be difficult for service providers. Customers expect privacy and trust these companies would not reveal their personal information. In environments where everyone is entitled to a transparent legal procedure, providing customer information is not so problematic. However, some critics of the SIM registration drives in Africa point out that, in some countries, political dissent may be considered a severely punishable crime. Amnesty International, for example, expressed its concern that communication interceptions in Uganda could be misused to isolate political opposition. There, legal provisions loosely define what types of activities permit the release of protected information.<sup>33</sup>

### Data Use and Implementation

Undoubtedly, well designed and implemented SIM registration carries great potential for countries to take advantage of user data for development goals. Simple tracking of customers, however, unless complemented by swift action and timely police response when crimes occur, may not bring the desired changes. Additionally, a parallel effort to make official identification of documents easily accessible is a necessary prerequisite.

### Loss of Revenue

The net result of SIM registration is the exclusion of some cell phone users from services. In addition to losing customers and eroding profits, registering SIMs may discourage companies from aggressively expanding their services.

### Inability to Communicate/Exclusion

One of the reasons the mobile phone market exploded was the relative ease of obtaining a communication device. Mobile phones are more attractive than obsolete landlines, which cover a fraction of the population. In

the context of heavy internal migration from rural areas to urban centers in most African countries, mobile phones have provided hundreds of millions of Africans the ability to use their numbers as “digital addresses.” The registration of SIM cards affects the convenience Africans have been enjoying for more than a decade.

### Loopholes, Social Obligation, and Mistaken Identity

Social networks based on mutual benefit are characteristic of African cultures, leading to socially-accepted evasion of identification requirements. Currently, there are no limits on the number of SIM cards an individual could possess in most cases. For instance, one person can register five SIM cards and offer them to friends or extended family members (who, in turn, might pass them on to others), and anyone in the chain could resell or rent those cards. Already there are reports of black markets in South Africa and elsewhere for registered SIMs. In the event that someone in the network uses the SIM for illegal purposes, a case of mistaken identity may cause investigative delays or confrontation with law enforcement for the original owner, who was simply following a social obligation.

### *Collateral registry*

Issuing accounts – whether for savings, checking, investment or mobile money transfers – constitutes only the first small step into financial inclusion. Needless to say, a key element of the health of an economy and the ability for enterprising citizens to move upwards is the availability of credit. Most SMEs in emerging markets cannot get essential capital for expansion and growth because the options are limited. Instead, they depend largely on loans from family and friends. Small businesses are often denied formal loans because of limited collateral profiles and lending practices that disfavor moveable assets. Some alternatives exist, such as MFI loans, but those tend to be short-term and small-value loans. For those who do have adequate collateral, lenders put themselves at risk when that collateral covers multiple loan obligations.

A few innovations have appeared to address this issue. The most important is the development of integrated collateral registry databases. Emerging market countries in Southeast Asia and Eastern Europe successfully introduced centralized collateral registries, hoping to expand the credit market. Sri Lanka, for instance, has a collateral registration resource known as the Secure Transaction Register (STR), managed by the Credit Information Bureau of Sri Lanka. The database can be accessed electronically to register and search debts and pledged collateral, including movable assets.<sup>34</sup> Sri Lanka’s STR is solidly supported by the country’s Secure Transactions Act, which provides the registry with the necessary legal framework.

In Africa, credit bureau and collateral registry services are decentralized and prohibitively expensive in most instances. As a result, banks prefer to conduct their credit businesses with a revolving short list of large enterprises that are able to present collateral in the form of real estate and other immovable assets. There have been some positive developments, however. Registration processes are being improved in countries like Nigeria and Kenya.<sup>35</sup> Kenya is at an early stage, whereas Nigeria has made some progress to ease the complicated credit management landscape. Overwhelmed by defaults and dishonest debtors, Nigeria, for example, initiated the web-accessible Credit Risk Management System (CRMS), together with regulatory provisions.<sup>36</sup> Although the Nigerian system captures credit data, including credit enquiries and applicant liabilities, it suffers from systemic and data classification problems. The inability to identify people with unique attributes hinders the CRMS because identification documents such as national IDs are not necessarily reliable and the system cannot yet filter out duplicates. According to a CGAP report, only 30,000 borrowers were entered into the system as of 2008.<sup>37</sup>

### Ghana Collateral Registry

Among the few countries in Africa that streamlined their credit industries, Ghana has one of the best and most functional collateral registries. The country's Parliament instituted the registry under the Borrowers and Lenders Act of 2008 (Act 773),<sup>38</sup> which created the registry to record charges and collaterals. The system was intended to improve access to credit by SMEs by capturing and managing the relationships between borrowers and their lenders. Act 773 encourages lending institutions to consider a broader variety of assets, and promotes transparency that eliminates hidden charges. Guaranteeing full disclosure protects both financial institutions and borrowers. Act 773 also protects the rights of borrowers to apply for credit regardless of gender, ethnic origin, or political affiliation. It requires a lender to provide the borrower with pre-agreement documents and quotations before granting credit or loans. Currently, a fully integrated and redesigned electronic database is in the development stage in Ghana, with funding obtained from the Swiss government and in collaboration with the IFC.<sup>39</sup>

### **Key Collateral Registry Challenges in Africa**

#### Regulations

Comprehensive secured transaction regulations are a basic prerequisites for centralized collateral registries. Few countries in Africa have such regulations. Without the legal frameworks detailing how registry data can be generated, maintained, shared, and enforced consistently, it would be hard to determine what kinds of assets qualify as collateral or who should receive loans. Applicable laws and regulations should clearly define the rights and obligations of all parties. Lenders would be more willing to issue credit if they are allowed to protect themselves against evident risk, and if assured of the full support of the law to seek immediate recourse in the case of defaults. Similarly, the law must protect borrowers from vague terms and conditions, as well as unexplained rejection of applications.

#### Technology and Centralized Electronic Databases

Integrating collateral registration procedures and data requires a reliable and secure technological input. Mixed paper-based and stand-alone computerized data collection systems characterize many African banks. This exposes them to risks from duplicate credit requests. Under current practices, a bank has limited resources to check if a borrower has over-leveraged assets or track multiple applications filed with others financial institutions. Successful registries should be equipped with the latest technology, well-trained staff, and high ethical, security, and legal standards.

#### Unique Identification of Clients

Creating a system that protects lenders against identity fraud is crucial. Many African financial institutions encounter falsified identity and real estate documents, as well as systemic corruption in the form of allowing personal connections to bypass regulatory requirements. For collateral registries to be effective, it is highly important to deal with identity issues in order to make documents more secure and reliable.

## Market Maturity and Underpinning Infrastructure Challenges

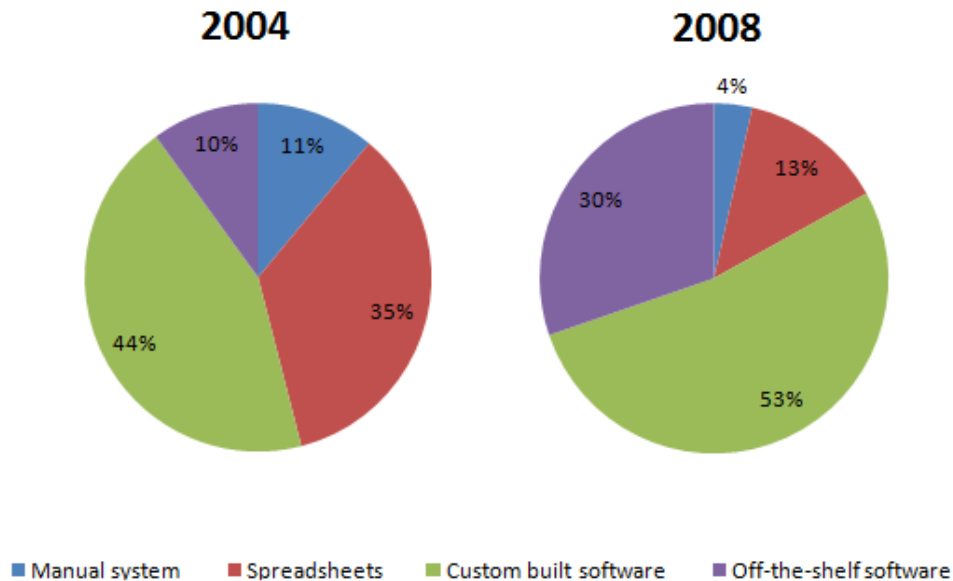
### Opportunities and challenges for small banks/MFIs to adopt cloud-based, software-as-a-service (SaaS) MIS systems

The benefits to African banks and MFIs adopting IT banking information systems has long been promoted. Such systems offer:<sup>40</sup>

- Increased staff productivity
- Better products based on product performance data
- Increased access to financing and lower financing costs, due to better transparency
- Reduced portfolio-at-risk (PAR)
- Predictive analytic possibilities
- Improved and less costly audits

Smaller banks and MFIs throughout Africa have faced numerous obstacles when seeking to implement these systems. They have required relatively significant upfront capital expenditures, skilled IT staff to operate and maintain systems and train users, and connectivity among branches. Despite these challenges, progress continues to be made.

Figure 3: Progress of MFIs in adopting IT backend systems<sup>41</sup>



There is an important distinction to be made between having a system and making full use of it. Even larger banks in Africa that are better able to overcome entry obstacles have not fully utilized IT backend investments.

### Overcoming barriers to adoption and use – the potential for cloud-based, software-as-a-service systems

Information technology advances that offer banks and MFIs the ability to ‘rent’ systems (rather than purchase them) and effectively outsource maintenance and system expansion, present significant advantages for banking institutions. In effect, two advanced IT practices are operating in parallel. The ability to purchase software rights on a usage basis – referred to as a Software-as-a-Service (SaaS) – alleviates high upfront capital

expenditures. While they may still require upfront costs for service initiation and training, this model is less costly in the short-term. Second, these SaaS systems, in order to be operated and maintained offsite, require that bank customers have regular and reliable access to the system. These systems and supporting data are accessible via secure online communication channels – popularly described as the Internet “Cloud.” Banking institutions require only generic computers with Internet access and less data storage capacity. Energy and infrastructure-intensive data storage and analytics occur within the SaaS host system’s environment.

Table 2: Comparing Traditional and Cloud-based SaaS MIS Systems Against African Bank IT Challenges

Challenges	Traditional, locally-installed or developed MIS solutions	Cloud-based SaaS MIS solutions
IT skill set - install and train	Required	Less demand for internal IT resources online training and on-site visits Internal staff skills can be more generalist in nature
IT skill set - maintain systems	Required	Maintenance managed by SaaS provider
IT skill set - enhance capabilities	Required at minimum to identify and procure new capabilities	Solutions are enhanced by SaaS partner; as with traditional systems, bank still must train and enforce new capability usage
Reliable Electricity	Does not address	Does not address; potentially lower local energy demand if primary data storage and process occurring offsite with SaaS provider.
Oversight and auditing	Yes	Yes
Communications Infrastructure	According to the CGAP 2008 survey, bank branch Internet connections represented the largest challenge for roll-out of MIS solutions for banks	Presents a greater challenge to the cloud-based model than it does to traditional solutions
Data sharing and analytics	Limited to isolated installations	Can utilize comparison analytic capabilities with other SaaS adopters

Challenges

While cloud-based SaaS systems can overcome or alleviate some challenges, others remain:

- *Data Discrepancies:* Prior to conversion to ICT resources, most data in MFIs is entered manually into books or spreadsheets. The process of migrating the legacy data can generate significant errors, for SaaS and traditional solutions alike, due to ill-equipped staff or lack of information. These errors can have consequences on the evaluation of the MFI’s performance.
- *Security Challenges:* Although many SaaS providers emphasize their secure systems, there is always the challenge of maintaining tight security – heightened by the reliance on one software system to provide such a dense network of services to the client. Establishing trust between the MFI and any solution provider is essential for a more effective partnership.
- *Threat of Transparency:* Most MFIs, particularly those in Sub-Saharan Africa, are apprehensive about the use of SaaS models because of the double-edged sword of transparency. In order to protect profits, most would prefer to remain close-booked.
- *Fear of Redundancy:* Since data is so easily stored with new SaaS technologies and it expands outreach of individual MFIs considerably, many MFIs fear that they may go out of business because their services might become redundant. If SaaS technologies consolidate the number of institutions, it would change the entire landscape of MFIs.
- *Customer Service and Support:* Once an MFI has integrated SaaS software into its day-to-day activities, it requires regular customer service and support. So far, this has been an area in which much more work is needed. Solution providers need to continuously remain responsible and incentivized to manage customer expectations once the initial set-up has been completed.

## *Credit Bureaus*

Even when consumers in Africa can convince lenders they are a good credit risk (e.g., by having an independent party vouch for their reliability, trustworthiness, and ability to take on additional debt), they often face high interest rates. Credit bureaus allow several actors in commerce and financial services to combine information on individual consumers, debt obligations and payment histories in order to reduce risk. The result is greater access to capital at better terms.

Despite the known benefit and need of credit bureau models, there has been limited success introducing such solutions in Africa. Credit bureaus require significant coordination in order to be realized, aided by transparency and policy intervention. Consumer protections must also be in place to prevent abuse of sensitive personal financial data.

Reliable, accessible data is also critical. Many banks in Africa, particularly smaller ones and informal institutions, rely on paper records, making data analytics nearly impossible for a common credit bureau service. Even larger institutions that have installed backend systems may not utilize them to their full potential for monitoring account holder practices.

Many pre-requisites are needed to tackle the challenges of credit bureaus, including:

- Identification that ties a consumer or small business to a transaction history
- Effective management of data
- Data standards that share historical information across partners (to avoid over-lending)
- Robust data networks accessible to all players offering credit products to consumers

In lieu of conventional means for determining credit worthiness from bank data, development practitioners are exploring other sources of data to create an understanding of user behavior and cash availability. One source that has been explored is the potential to use mobile transaction data and prepaid top-offs as customer behavior indicators.<sup>42</sup> A key challenge of pursuing this option is variable consumer protection regulations over the use of this data. Telecommunication ministries provide oversight for consumer privacy pertaining to communications data and using such data for credit assessment purposes. These rules may overlap with financial regulations concerning data that are maintained and protected by financial institutions. Coordinating the regulatory jurisdictions between government authorities, telcos and financial institutions is a difficult task.

Other issues in using mobile transaction data as a determiner of credit worthiness include:

- A clear and compelling business case is needed in order for MNOs and m-payment providers to subscribe to (and share information with) a credit reference bureau.
- Mobile transaction data may be more useful as a market segmentation tool to separate lower- and higher-risk segments.
- A longer record history – one to two or more years – may be required to reliably predict behavior and trends from the data.
- Mobile transaction data may increase the accuracy of credit scoring and risk evaluation only when combined with mainstream credit bureau data.

## Part II. Evaluating and Ranking the Opportunities

Part I showcased key areas of opportunity for improving Africa’s financial services sector. Within each of these areas, there are numerous implementation challenges and nuances that cannot be covered within the scope of this report. Realizing any one of these opportunities will be a significant undertaking for a nation, or a coordinated international effort. While progress will, and should, continue on all of these fronts, policy makers and the donor community must set priorities and decide which opportunities can be most effectively pursued. The reasons for such an organized approach include limited resources, the challenge of international coordination, and the fact that some initiatives must receive more attention earlier in the development process.

Part II offers the beginning of a framework for evaluating these opportunities. Combined with Part III, which examines the challenges of scaling through ICT solutions, policy makers will have a basis for deliberating where and how to focus attention.

The criteria offered for determining the greatest opportunities consider the potential impact for financial inclusion, and consideration of non-ICT requisites. Toward this end, the criteria identified are:

- *Targets marginalized populations:* Does the opportunity have significant value to the greatest financial service needs of the most marginalized populations?
- *Broad impact potential:* Does the opportunity offer a solution to the needs of the largest segment of the population?
- *Solution conducive to ICT investment:* Does the opportunity benefit from ICT capabilities such as enabling data sharing, data analytics, and broad access?
- *Current policy environment support:* Does the opportunity depend on specific regulatory guidelines and are those guidelines in place?
- *Coordination and cooperation benefits (sector + internationally):* Is the opportunity one that benefits from coordination such as a dependence on standards or opportunity for co-investment?

Table 3 offers a review of the opportunities cited in Part I vis-à-vis these criteria.

Table 3: Assessing Financial Sector Development Opportunities

	Targets marginalized population	Broad impact potential	Solution conducive to ICT investment	Current policy in place?	Benefitting from coordination (sector & international)?
<b>End User Solutions</b>					
Mobile payments	Yes, following penetration among urban and banked populations	Yes, dependent on national mobile penetration	Yes, a requisite	Evolving	Sector coordination needed
Diversified mobile financial services	Potential, following fundamental payments adoption	Diversification will increasingly serve segmented populations	Yes, a requisite	Dependent on services delivered	Not necessarily
SME access to capital	Potential	Yes	Several ICT related elements needed	Dependent on element	Dependent on element
<b>Governance and Regulatory Matters</b>					
SIM Registration as Identification	Only those with phone	Yes	Yes, requisite	Some cases	Yes
Collateral registry	Yes	Yes	Yes, requisite	No	Yes
<b>Market Maturity and Supporting Infrastructure</b>					
SaaS for MFIs	Indirectly	Yes	Yes, requisite	No	Yes
Credit bureaus	Yes	Yes	Yes, requisite	No	Yes

### Part III. Challenges to scaling through ICT

The following factors have been used for assessing challenges to scaling the identified opportunities through ICT investments:

- Capital expenditure
- Maintenance
- Use/training
- Trust and reliability
- Ubiquitous access/coverage
- Pre-requisite solution needs

Each of the solution opportunities will be considered within the context of these potential challenges to assess which apply, and to what degree.

#### Mobile payments

Much of the capital requirements are borne by consumers who invest in handsets. Expenditure requirements are low on a per customer basis. Consumers benefit from the productivity gains that come with owning a phone for basic communication needs, and services such as mobile payments add to the utility and value of their investment. Training has been identified as an early-stage challenge for mobile payments until frequent use leads to better understanding and users can learn from their peers. Perhaps the greatest challenge to scale, from an ICT perspective, is one of interoperability among currently closed systems. Particularly for rural populations, there may be few service providers and limited cash in/out points.

#### Diversified mobile financial services

The greatest challenges to diversified mobile financial services are the pre-requisite of basic payment services and user needs/experience data to inform new product design.

#### SME access to capital

Access to capital challenges are embedded within each of the necessary supporting components included in this chapter – credit bureaus, collateral registries, and more robust backend systems at banks that better capture and utilize customer information for assessing credit worthiness.

#### SIM for identification

Using a mobile SIM card as means of identification faces a scaling challenge when dealing with populations who have no phone access (or shared access). As mobile penetration increases, the problem is reduced. Models such as Movirtu are being introduced to address this challenge. Nevertheless, SIM identification alone is not enough. Mechanisms for capturing and appending credentials to these unique numbers is required, whether it is a PIN or biometric information. Evidence from markets such as India will inform the chances of success for this model.

#### Collateral registry

The greatest ICT challenges to scale involve agreement on common data standards and access protocols in order to coordinate the aggregation of data across various institutions and service providers. The public sector has an opportunity here to intervene by establishing an online registry available to all market participants, as is now underway in Ghana.

SaaS for MFIs

The single greatest ICT challenge for scaling SaaS solutions for MFIs is Internet access and reliability. Without better reliability, MFIs are unlikely to use cloud-based services for mission critical applications. Some of this risk can be reduced with solutions that allow MFIs to perform some tasks offline and to synchronize information when Internet access is available, although this comes at a performance cost.

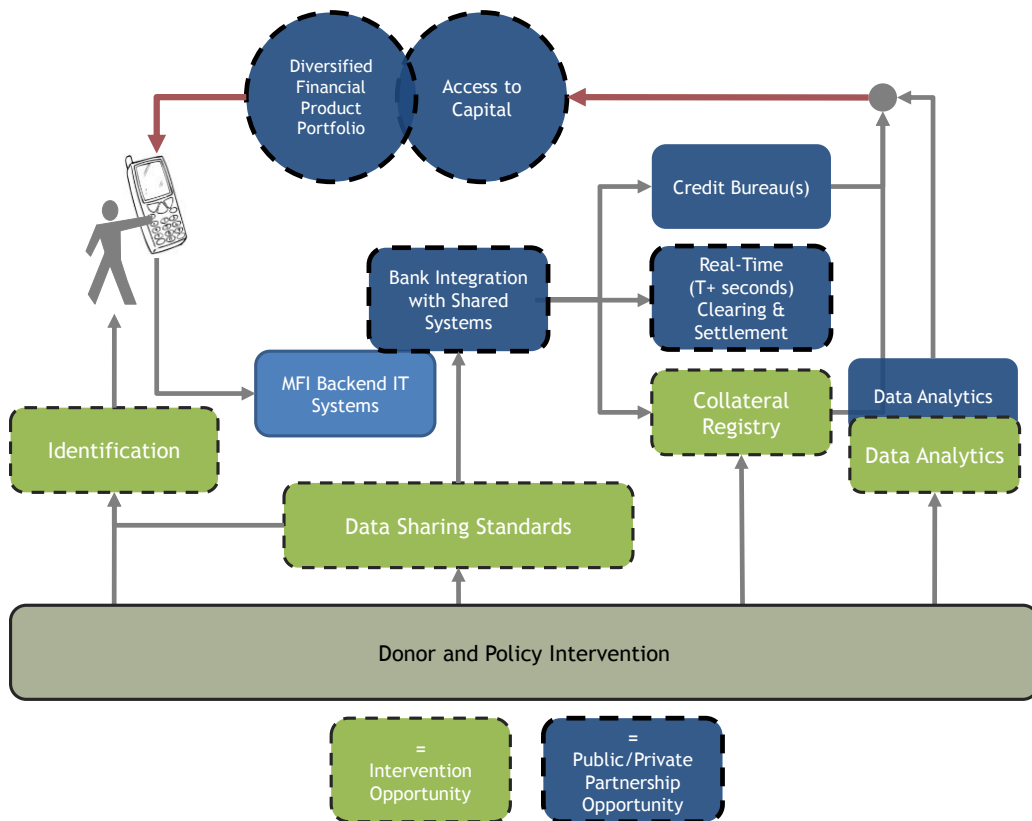
Credit bureaus

One of the greatest ICT challenges to scale involves agreement on common data standards and access protocols. There is great opportunity here at the policy guidance level to coordinate communications among relevant market and public sector participants. There is also a pre-requisite need for financial institutions of all kinds to have the IT backend systems in place to effectively share and utilized consumer transaction information necessary for credit bureau assessment.

**The Way Forward**

The opportunities and challenges raised in this chapter are each complex in their own right. Further, many of these are closely linked and constitute only a part of the complex ecosystem of financial services. The following figure offers perspective on the interconnections and pre-requisites among these various elements of a robust financial services sector.

Figure 1: Interconnection among financial service solutions



In Chapters 5 and 6, this framework will serve to guide the ICT policy and donor investment considerations for increasing financial inclusion. An enabling landscape rests on a combination of actions based on policy interventions as well as donor strategies that include: 1) introducing integrated and interoperable financial institution backend systems, 2) creating better access to capital supported by a centralized collateral registry and 3) functioning and coordinated credit bureaus, 4) establishing accurate but flexible customer identification and data analytics, and 5) developing national and continent-wide data sharing standards.

## Chapter 4: Case Studies

### Senegal

Senegal’s economy is strengthened by a relatively good infrastructure, openness, the nation’s ability to attract investment and ambitious development projects. For a mobile society with a large migrant population, the importance of telecommunication and financial services cannot be overstated. Senegal’s ICT sector, in particular, enjoys a steady growth in the area of mobile telephony with 68.55% coverage in 2010. The figure for financial services, although improving, is much lower (16%). However, the barriers to increased financial inclusion in Senegal are quickly disappearing as technology innovations and mobile payment services spread across Africa,

Some of the factors that have delayed the expansion of financial services in Senegal are limited products, low-risk behavior, and the lack of interest by banks to serve SMEs and the “informal economy.” Although there are more than 200 MFIs, they suffer from inadequate capital, a narrow menu of products, a lack of professionalism, and limited technological resources.

Telcos in Senegal could make financial services accessible without the geographic and time limitations that characterize branch banking. A more aggressive drive to deliver new services, such as the recently launched Orange Money, can transform the landscape if matched by trusted, demand-driven products and flexible customer identification requirements. Overall, Senegal is at the tipping point to become one of top performers in financial services in Africa (see Table 1).

Table 1: At a glance: Senegal Challenges and Opportunities

Drivers of Growth	Readiness (Regulations, Infrastructure, Demand)	Challenges	Opportunities
ICTs	High	<ul style="list-style-type: none"> <li>▪ Multiple regulators</li> <li>▪ Bureaucracy</li> <li>▪ Slow mobile money services</li> </ul>	<ul style="list-style-type: none"> <li>▪ Diversification of products/services offered on existing platforms (mobile)</li> <li>▪ Linking to financial and non-financial services</li> </ul>
Financial Services	Low-Medium	<ul style="list-style-type: none"> <li>▪ Up-market focus</li> <li>▪ Inefficient MFIs</li> <li>▪ Lack of credit to SMEs and the informal sector</li> <li>▪ technology limitations</li> </ul>	<ul style="list-style-type: none"> <li>▪ Low-cost, down-market banking</li> <li>▪ Leveraging excessive technological capacity</li> <li>▪ Diversification of products and delivery platforms</li> </ul>
Market Players	Medium	<ul style="list-style-type: none"> <li>▪ Limited knowledge of market</li> <li>▪ Competition not aggressive enough</li> <li>▪ bureaucracy</li> </ul>	<ul style="list-style-type: none"> <li>▪ Demand-driven product offering</li> <li>▪ More competition</li> </ul>

## Landscape

A politically stable nation on the Atlantic, with a population of close to 14 million, Senegal has a comparatively strong economy that stands out in Francophone West Africa. It should be noted, however that foreign aid dollars play a significant role in the economy, and the country has suffered from the global recession over the past few years. This former French colony opted out of the Senegambia nominal confederation in 1989 (whose aim was to integrate Gambia and Senegal) and now has a political system deemed “partially free” by the Freedom House.<sup>43</sup>

## Economy

The economy is much stronger and more dynamic than many African countries, with a boom in the services sector. It has one of the most favorable macro-economic policies coupled with commendable openness to foreign investment that have yet to translate to sustained growth. In addition to its status as a major shipping hub in West Africa, Senegal’s top foreign exchange earners are ground nuts, fish, phosphate, and tourism. However, Senegal’s economic growth is constrained by limited natural resources, a struggling agricultural sector and a manufacturing sector that faces stiff competition from Asian countries. Though the country has a very high unemployment rate, it also has a strong “informal economy,” which is unfortunately marked by crime, especially in Dakar.

## Financial Services

A Tipping Point Index (TPI) developed by Accenture rates Senegal at 0.27 as a potential “next mover” to the group of top scorers in financial services. (By comparison, South Africa is rated at 0.73 TPI).<sup>44</sup> As a signatory of the West Africa Economic Monetary Union (UEMOA), Senegal’s financial institutions are regulated by the BCEAO, the regional central bank of West African states with eight Francophone member states sharing the CFA franc as their common currency. The overall financial services penetration is around 16% (6% banks, 10% MFIs), despite the fact that Senegal accounts for 24% of the combined banking assets of UEMOA states. After years of state domination, the banking sector opened up to private players in the 1990s. The sector has seen the growth of well-financed foreign banks serving a minority middle class and a wealthy upper class. Of the 18 banks in the country, six hold more than 85% the market’s assets.<sup>45</sup> Capital access to SMEs and the rather large informal sector still remains very limited.

Microfinance institutions (MFIs) also spread widely in recent years, seeking to serve the unbanked in various regions of the country. Currently, 3 large MFIs and 200 smaller organizations control 80% of the services. Many of these institutions, however, have proved inefficient, and have not achieved a wide footprint or coverage. According to recent studies,<sup>46</sup> many MFIs lack external capital, professional staff, and robust banking technology. The Senegalese government has taken some steps to support some of the larger institutions by providing assistance and regulating them under the BCEAO. Currently, regulations to encourage mergers are in development.

## ICTs

Senegal is one of Africa’s top spenders on ICTs as a percentage of its GDP. Regulated by two entities, the *Agence de l’Informatique de l’État* (ADIE) and the *Agence de Régulation des Télécommunications et des Postes* (ARTP), both under direct supervision of the president’s office, the country prides itself on having a good ICT policy and infrastructure. Senegal was one of the first countries in Africa to liberalize its telecommunications sector in 2004, allowing MNOs to enter the market. As one of Africa’s top ICT performers, the country is increasing rural

connection efforts to reach the objectives laid out by the World Summit of the Information Society (WSIS) by 2015.<sup>47</sup> In addition, the nation is transitioning from IPV4 and exploring policies to ensure that all network equipment entering the country is IPv6-compatible. The ICT sector escaped the global recession and shows strong growth, especially in mobile phone services uptake. According to the ITU,<sup>48</sup> the total number of cell phones in Senegal reached 8.34 million or 68.55% penetration in the last quarter of 2010. Out of the 515,967 new subscribers, 390,000 were SONATEL (Orange Senegal) customers, raising the company's market share to 61%. The second largest provider, SENTEL, suffered a net loss, while the third player EXPRESSO, reached a 10.8% share of the market during the same period. The three mobile providers, Orange (SONATEL), SENTEL and EXPRESSO hold GSM 900 licenses. Sudanese-owned EXPRESSO also offers 3G services.

The landline teledensity remains stagnant at 2.81% compared to an 89.2% ADSL connection rate. Almost all Internet subscribers in Senegal use ADSL connections offered by four ISPs. Although broadband subscription is relatively low (0.5% as of 2009), the number of Internet users has been increasing, reaching 7.4% in 2009. This represented a 50% growth rate in 2009, demonstrating the popularity of shared usage. Senegal is connected to the global network by a bandwidth of 2.9 Gbps via underwater fiber optics and satellite.

### *Mobile Banking*

As of 2011, three mobile banking services (without full-suite banking features) are active: Orange, CSI, and People Input (Mobile Cash).<sup>49</sup> SONATEL (a subsidiary of Orange), in collaboration with banking partner BICIS/BNP and leveraging its large customer base, launched the major money transfer service (Orange Money) that allows 200,000 subscribers to send and receive money.<sup>50</sup> The government of Senegal is also undertaking an interoperable mobile banking platform project funded by the German Cooperation Council.

### **Socio-cultural Factors**

There is a high rate of internal and international migration out of Senegal due to a failing agricultural sector and a lack of opportunities. Close to half of the population lives in urban areas, where housing is an overwhelming challenge (despite a housing boom financed by the Senegalese diaspora). Urbanization continues because of internal migration and rapid population growth. The national literacy level of 39.9% and an even lower 29.2% literacy for women (the engines of the informal economy) is another hurdle in both urban and rural areas.<sup>51</sup>

### *Remittances and Islamic Banking*

Senegalese culture encourages travel in search of better opportunities, a concept that is enshrined in many local proverbs. There are no exact figures that show the number of Senegalese immigrants in Europe, North America, West Africa or the rest of the world, but the number could be as high as ten percent of the population. This makes remittances a crucial part of the country's economy. In 2010, for example, Senegal received \$600 billion CFA (US\$1.4 billion), accounting for 10% of GDP.<sup>52</sup> This does not include money sent through the widespread informal channels.<sup>53</sup> Of course, previous years registered a decline in remittances as a result of the global financial crisis.

***He who does not travel will never  
know where it is best to live.***

**Wolof proverb**

On a cultural level, the majority of Senegalese are Muslims, primarily Sufi, with global communities interconnected through networks led by learned elders, known as *Mourids*, who hold significant political and economic influence. These demographic and cultural factors make remittances important for families and the national economy. Currently, there are very few formal financial services that cater to Muslims, with the

exception of United Bank of Africa (UBA) and some Middle Eastern/Islamic funds that are interested in entering the Senegalese market.<sup>54</sup>

### **General infrastructure**

Overall infrastructure in the country can support ambitious economic growth. The country is interconnected by paved and unpaved roads and there are 20 airports across the nation, although hikes in the price of gas make travel and transport expensive. As a regional hub, the port of Dakar contributes revenue to the national economy. The country also has one of the best water and sanitation infrastructures in the continent.

## **Challenges**

Financial inclusion strategies in Senegal focus on creating a critical mass of market solutions that offer more access to financial services. Regulations, market maturity, financial systems, and consumer challenges weigh on the successful delivery of financial services to the majority of Senegalese. The following are some key areas that require concerted effort by all players in the financial services ecosystem (see Table 2 for more details).

### **Bureaucracy**

Overly bureaucratic processes affect all sectors, despite the good intentions behind instituting multiple layers of regulatory procedures.<sup>55</sup> The ICT sector, for example, is regulated by two agencies under the president's office, in addition to the Ministry of Posts, Telecommunications, and NICT (New Information and Communication Technologies).<sup>56</sup> Navigating Senegal's intricate laws is another factor that makes hiring local staff for MNOs a complicated affair with lots of employment guarantees that hardly sit well with business principles of efficiency.

### **Up-market Banking**

Regardless of the fact that Senegal has the second largest financial sector in Francophone West Africa, its banks reach only a select group of clients concentrated in urban areas. Lending practices, in most cases, disfavor SMEs and the poor, the majority of whom are employed in the informal sector.

### **Inefficient MFIs**

Poor performance troubles most of the microfinance institutions, despite strong support from the Senegalese government and donors. Limitations of capital, lack of professionalism, and inadequate banking technology have kept microfinance from playing a central role in financial inclusion. In addition, some of the mobile payment services offered by MFIs in partnership with third-party entities narrowly focus on loan repayments.

### **Slow Mobile Money Transfer Service Growth**

Mobile money transfer services in Senegal have not spread as quickly as in other countries, although some players such as Orange and Obopay have made significant efforts in the market. It took Orange almost three years to launch its Orange Money service, which has now reached a subscriber base of a little more than 200,000. In the BCEAO countries, the service holds much potential, but a strong qualitative gap between supply and demand hampers growth.

## Opportunities

A revised approach that takes advantage of ubiquitous technology can convert the challenges of financial inclusion into opportunities in Senegal. Improved cooperation among businesses, government and non-profit organizations is essential to reach the unbanked profitably. On the technology side, the opportunities for private sector players include data storage and sharing, data transmission, device design and sales (both hardware and software), security, marketing, and data processing/analytics. The following are some pivotal opportunity areas for Senegal (see Table 2 for more details).

### **Low-cost Banking/Financial Services**

Current technological levels assure increased capacity in core banking systems that can be used to offer low-cost banking services, either by partnering with telcos, MFIs or viable stand-alone service providers across an array of platforms (including Internet, agent, mobile devices, ATMs/branches, etc.).

### **Demand-defined Products**

There is considerable opportunity for firms that focus on quality, price structure, reliability and product features that respond to specific market demands. The large remittance flows to (and within) Senegal offer unexploited potential to add expanded financial services to standard mobile payments. This would require telcos, banks, MFIs, and others to look into cross-marketing, co-branding/down-market rebranding, and interlinking their systems.

More relevant and better research and development (R&D) strategies are crucial for success. Money transfer services such as Orange Money address cultural restrictions on interest-earning transactions in Muslim-dominated Senegal. However, there is still room for financial services to more closely mirror existing social practices of money management.

### **Transaction-weighted KYC**

There is not enough evidence that Senegal's recent drive for a new national ID will cover all of its citizens in the near future, or that it will enable more people to have access to financial services. Crowded urban housing, compounded by internal migration from rural areas, makes the effort harder if not impossible. In this context, there is tremendous potential for financial services that allow "Know Your Customer" (KYC) flexibility for smaller transactions.

### **Regional Services**

Telcos and financial service providers have access to a large regional market. Common currency, regulations, language, and shared culture are favorable to money transfers and integrated cross-border services in Francophone West Africa. Companies like Orange hold an advantage because of their multi-county presence in the market that enables them to maximize ROIs with the least amount of customization.

Table 2: Senegal: Opportunities for ICT to help address financial services sector challenges

Financial Sector Development Challenges	Opportunities for ICT to help address financial services sector challenges					
	Data Storage and Sharing	Data Transmission	Device Advances	Security	Data Processing and Analytics	Marketing and Branding
<b>Consumer/End User Challenges</b>						
Transient populations	√	√	√	√	√	√
Remote populations		√	√	√	√	√
Understanding of consumer behavior and makeup	√		√		√	√
General literacy			√			
Financial literacy			√			
Trust of banking institutions (exposure and history)				√		√
Capital access (SME/MSME)	√				√	√
<b>Governing/Regulatory Challenges</b>						
Documentation requirements	√	√	√	√	√	
Inadequate client protection	√	√	√	√	√	
Complicated legal infrastructure	√	√		√	√	
<b>Market Maturity Challenges</b>						
Cost of established/conventional practices	√	√	√	√	√	
MFI narrow product approach	√	√	√	√	√	√
Interoperability, network cooperation	√	√	√		√	√
Cost of established/conventional products	√	√	√	√	√	√
Exposure to poor/unbanked markets/customers			√		√	
<b>Underpinning Financial Systems</b>						
Backend operations at MFIs and smaller banks	√	√		√	√	
Availability of credit bureaus	√	√	√	√	√	
Collateral registry	√			√		
Real-time payment processing/settlement (T+ seconds)	√	√	√		√	
Broader international banking integration	√	√	√	√	√	√

## Conclusion

Most of the necessary pieces are present in Senegal for significant expansion of financial inclusion. A solid infrastructure, steady economic growth, favorable regulations, and a robust private sector together with high-level government backing of ICT access would help Senegal leverage mobile technology for financial services. In a country where remittances play a significant role, matching the 68.55% penetration of mobile phones with financial services capable of capturing small transactions is technically possible, but operationally challenging.

Senegal's public sector has not yet offered strong incentives for telcos and banks to form partnerships that profitably serve lower-income markets using mobile platforms. Relatively simple incentives include reducing the layers of bureaucracy. Although MFIs would be a natural choice for financial inclusion because of their footprint in underserved areas, they are not attractive to risk-averse lenders. In order to meet its financial inclusion hopes, Senegal would have to transform the financial landscape by aligning policy and regulatory frameworks. The country should remove barriers to scale by reducing duplicate efforts by MFIs, donors, and the private sector players that offer different mobile financial services.

Significant opportunities exist in Senegal for MNOs to expand financial services. Recently launched mobile money transfer services, notably by Orange, are steps in the right direction. Speed to scale, however, remains an issue that challenges mobile payment services, mainly caused by a gap between demand and the types of products offered. With a well-coordinated strategy and policies that favor the poor, Senegal has the potential to become an exemplary performer in financial inclusion. Success in Senegal is likely to create a model that can be transferred to the rest of Francophone Africa.

## Kenya

Despite the political and ethnic turmoil that it has experienced in the last several years, Kenya's economy is still the largest and most diversified in the East African Community (EAC) and the wider East Africa/Horn of Africa region. Compared to its neighbors, aid only plays a very limited role, and Kenya's private sector is known for its resilience. The country serves as a transport hub for the region, and Kenyan firms increasingly aim for a regional footprint. Kenya's labor force is better educated than that of its neighbors, and Kenyan professionals are often hired throughout the region.

Kenya's ICT sector has benefited from these conditions and a relatively advanced telecommunications sector, strengthened by three fiber optic cables. The ICT sector was also identified as one of the key sectors to promote by the government in its Vision 2030 development plan.

The focus of extensive media coverage, Safaricom's mobile money service M-PESA (*'pesa'* is Kiswahili for money) has been hugely successful for several reasons. First, the company already had a widespread agent network, which meant that the service was easily accessible throughout the country. In addition, Safaricom's management have devoted a lot of effort and commitment to the brick-and-mortar issues of the business, in particular on agent training, branding, marketing, and security of the system.

Since its launch, a range of payment services have been added: subscribers can now pay at retail outlets, purchase airline tickets, make school fee payments and pay utility bills with their mobile money account. In addition, the service has become increasingly integrated with the banking sector: subscribers can pick up cash from PesaPoint ATMs, and Equity Bank was the first commercial bank to offer a link between M-PESA mobile money accounts and traditional bank accounts.

Agency banking allows commercial banks to use retail outlets and other agents to conduct a limited range of banking services through them. Agents need to be given access to the bank's core banking system. Given the infrastructural challenges, the banks currently rolling out this service use GSM technology as well.

In developing the mobile money service, the following problems were experienced:

- Regulatory issues: building a trustful relationship with the regulator, ensuring consumer protection, avoiding money laundering and fraud;
- System interoperability
- Agency banking-specific challenges

During development of the M-PESA service, stakeholders learned valuable lessons. The service must be rolled out not as a philanthropic or "corporate social responsibility" (CSR) activity, but as a valuable addition to the company's overall services, and with a commitment to invest in it and market it. It need not be focused on low-income clients only; services that are inclusive of high-income customers help to increase revenues. A successful mobile money service creates additional opportunities for the local ICT and developer industry, and can be used to roll out related services such as micro-insurance premium payments and payouts. There is also a potentially huge market in government payments such as pensions, state worker salaries, and other payments.

If the banking sector perceives mobile money services as an additional business opportunity rather than a competitor, both industries (as well as their clients) gain from this co-operation, and the financial sector is less likely to lobby against the introduction of mobile money services.

Table 1: At a glance: Kenya’s Challenges and Opportunities

Drivers of Growth	Readiness (Regulations, Infrastructure, Demand)	Challenges	Opportunities
ICTs	High	<ul style="list-style-type: none"> <li>▪ Address interoperability challenges to allow operator-independent platforms to compete</li> </ul>	<ul style="list-style-type: none"> <li>▪ Build on mobile money success by allowing greater functionality for other savings, payment and insurance products</li> </ul>
Financial Services	Medium	<ul style="list-style-type: none"> <li>▪ Overcome relatively high transaction costs by addressing market competition issues</li> <li>▪ Address international payments issues (such as remittances)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Create competitive environment for additional mobile or ICT-based savings and payments services to thrive</li> <li>▪ Improve and clarify regulatory structure to encourage cross-sector participation by telcos and banks/MFIs</li> <li>▪ Diversification of products and delivery platforms</li> </ul>
Market Players	Medium	<ul style="list-style-type: none"> <li>▪ Mitigate dominant market position of one carrier</li> </ul>	<ul style="list-style-type: none"> <li>▪ Encourage greater competition</li> </ul>

## Landscape

Kenya, located on the eastern coast of Africa and with a population of around 40 million, is the largest and most diversified economy in the region. Donor funding is relatively low compared to its neighboring countries in the East African Community (EAC), and this has helped Kenya develop a vibrant and resilient private sector.

### Economy

Macroeconomic policy is generally market- and stability-oriented, but corruption is pervasive and red tape remains a concern. Kenya serves as the regional transport, trade and financial hub. Its Mombasa seaport serves Uganda, Rwanda, South Sudan and eastern Democratic Republic of Congo (DRC).

Agriculture contributes around 22% of GDP, and much of the manufacturing sector depends on agricultural inputs. Industry currently represents 16% of GDP, and the services sector 62%. Tea and horticulture are key exports with a share of 23.8% and 18.7% of overall exports respectively in 2010. Tourism is another key foreign exchange earner.

Kenya’s physical infrastructure, like in many other countries, is in urgent need of rehabilitation, modernization and expansion: 95% of the goods traffic into the country and its central African neighbors is still via road, which puts enormous pressure on the country’s limited road network. The rehabilitation of the Kenya-Uganda railway from Mombasa’s seaport has recently gained momentum after the project was taken over by Citadel Capital, who brought in a new management team and signed a US\$164 million loan that is expected to smooth operations. Kenya is also expanding the road network to create additional roads to Tanzania, Ethiopia, and the northern corridor. The government and private sector have also made progress by investing in three fiber optic cables (Seacom, TEAMS, EASSy).

Despite the often challenging political situation and high levels of corruption, Kenya continues to attract international firms seeking to set up a local representation in the regional EAC market.

## **Financial Services**

The Tipping Point Index (TPI) developed by Accenture rates Kenya at 0.27, the same score as Senegal, as a potential “next mover” to the group of top scorers in financial services.<sup>57</sup>

Kenya’s financial sector is supervised by the Central Bank of Kenya (CKB), and currently comprises:

- 43 licensed commercial banks and one mortgage finance institution. Of these 44 financial institutions, 31 are locally owned;
- Three foreign financial institutions with representative offices in Kenya;
- The CBK has also licensed five deposit-taking microfinance institutions. Non-deposit-taking microfinance institutions can operate without a license – regulations are still being discussed.
- Kenya’s regulatory framework also contains regulations for non-bank financial institutions and building societies; however, none of these are currently licensed.
- The CBK also licenses credit reference bureaus – the first started operating in 2010 – and foreign exchange bureaus. At the moment, there are 122 licensed foreign exchange bureaus.

The Kenyan financial sector withstood the global financial crisis relatively well, partly as a function of conservative lending, and partly due to limited integration into global financial markets. In 2010, Kenya’s financial sector grew by 8.8%, and several Kenyan financial institutions are building a regional presence. Amongst them are Kenya Commercial Bank (KCB), Equity Bank, Fina Bank, and Commercial Bank of Africa (CBA).

Interest rate spreads remain high, which makes corporate borrowing for anyone but the largest firms expensive. However, personal loans have become far more widely available in recent years as banks tried to reverse the earlier trend of rolling back their retail branch network. This was a combination of several factors:

- After economic stagnation in the last years of the Moi administration (late 1990s to 2002), GDP growth began to recover under the first Kibaki administration. The post-election crisis in early 2008 and the global financial crisis temporarily halted this recovery, but Kenya’s economy generally responded to the deregulation under Kibaki and a growing (if still small) middle class with salaried employees, professionals and civil servants has become a target clientele for the financial services sector.
- Advances in technology have made the administration of smaller accounts more economical.
- Equity Bank has set a trend in expanding into the lower-income retail sector, and Safaricom’s hugely successful mobile money service M-PESA has also forced banks to pay more attention to a clientele that they would previously not have considered eligible for services.

The microfinance sector in Kenya is smaller than in Tanzania and Uganda. One reason is that there is less donor funding. Another is that Kenya has a much stronger savings and credit cooperative organization (SACCO). The Association of Microfinance Institutions of Kenya (AMFI) currently has 50 members, but these include licensed commercial banks such as Equity Bank and Co-operative Bank.

## **ICT Sector**

The Government of Kenya considers the ICT sector as one of the key sectors in the realization of its Vision 2030 development plan, and has supported the establishment of the three fiber optic cables – Seacon, TEAMs and EASSy. The government also continues to support a dynamic but nascent developer community.

Kenya’s mobile telecoms market is intensely competitive. Safaricom still holds nearly 70% of the market, despite Bharti Airtel’s aggressive tariff reductions. Airtel has grown to 15.2% of the market, and the remainder is shared

between Telkom Kenya's Orange and Essar's Yu, at 8.5% and 6.4% market share respectively. At the end of 2010, Kenya had almost 25 million mobile subscribers, or 64.2% of the population, although dual SIM card usage probably means that the percentage is slightly lower.<sup>58</sup> Kenya's fixed-line network, in contrast, remains small and inefficient. From 2010 to 2011, fixed lines actually fell by 0.8% from 228,391 to 226,587 lines. Telkom Kenya also struggles with cable cuts and cable vandalism.

The telecommunications landscape is partly a legacy issue. When Celtel acquired Kencell, the latter's market share had just fallen from 60% to 40%. Celtel initially focused on upmarket clients and were never able to catch up with Safaricom's aggressive expansion in the low-end retail market. The third and fourth place operators experienced their own problems: France Telecom invested in Telkom Kenya and rolled out its Orange brand, but underestimated the legacy issues in the former parastatal. Similarly, the fourth license currently held by India's Essar and run under their Yu brand had initially started out as Econet and suffered repeated delays due to difficulties with their local partner.

Kenya has also been the launch pad for several innovations in the mobile sector, including mobile money and Zain's 'One Network,' which removed roaming charges across sub-Saharan Africa. Since voice revenues have fallen significantly since Airtel launched their tariff war, competition is increasingly focusing on data, and in particular mobile data, services. Operators offer subsidized handsets to increase smartphone usage.

### **Mobile Banking**

Currently, all four mobile operators in Kenya offer mobile money services:

- *Safaricom*: M-PESA – launched as the first service in the market in July 2007.
- *Airtel*: Zap (still the brand name introduced by Celtel, although the service will reportedly be re-launched)
- *Essar Yu*: YuCash, operated by Obopay
- *Telkom Orange*: Orange Money

However, only Safaricom has a significant number of transactions and turnover so far – largely because it still has nearly 70% market share:<sup>59</sup>

- Of the company's 17.2 million active subscribers, 13.8 million are registered M-PESA users (81% of the subscriber base).<sup>60</sup>
- The company has a network of 26,948 agents, 657 paybill partners and a number of retail partners where clients can pay with M-PESA.
- M-PESA is also growing in importance for revenues. In the past financial year, M-PESA revenues grew by 56% to KES11.8 billion (US\$ 127 million), while growth in M-PESA clients was 46%. This represents 12.4% of all Safaricom revenues. Safaricom initially downplayed the revenue impact, arguing that mobile money mainly created 'stickiness' for clients, but it is clearly a commercially relevant service.
- M-PESA's success has become important for corporate strategy in the intensifying price competition, especially in the context of the recently introduced mobile number portability. If clients port to another operator, they will lose their M-PESA account. As none of the other operators offer a similarly powerful mobile money product, this adds to the network effect and customer retention.

Mobile money has evolved rapidly in Kenya, constantly adding new services. To date, the range of services comprises:

- Bill payments, including utility payments, TV, and Internet
- Purchase of airline or event tickets
- Payments in selected retail outlets, e.g., Uchumi supermarket, Deacons, and others

- School fee payments
- Corporate bulk payments to employees, agents
- In co-operation with I&M Bank, Safaricom launched the M-PESA pre-paid Visa Safari Card
- Western Union now allows the transfer of remittances straight into an M-PESA account. To date, this is only possible as an incoming transaction (M-PESA account holders cannot yet send money out of Kenya)
- M-PESA cash can also be retrieved from PesaPoint ATMs

### **Agency Banking: Using Mobile Technology**

In February 2011, Kenya published new regulations for agency banking that allow banks to offer services through third parties such as retail outlets, savings and credit co-operatives and others. Agents must have been in business for at least 18 months, must be profit-making entities, and must be able to fund a float for payments. They can offer a range of banking services including cash deposits and withdrawals, fund transfers, bill payments, loan payments, payment of benefits and salaries and collection of account and loan applications. However, they are restricted to cash-only transactions and cannot assess applications.

Agents must have secure operating systems that can carry out real time transactions, generate an audit trail, and protect data confidentiality and integrity. Technology plays a key role: Transactions can be made via mobile phone, a point of sale (POS) system, or Internet, and must be reflected immediately on the bank's side in the core banking system. To date, all banks that have rolled out agency banking services use GSM technology.

The following banks are currently rolling out agency banking services:

- Kenya Commercial Bank (KCB) is a large commercial bank, with a full range of services from corporate and housing to retail finance. KCB has a regional footprint (Kenya, Uganda, Tanzania, Rwanda, and South Sudan). The Bank also signed an agreement with the Postal Corporation of Kenya to use their network as agents.
- Postbank runs its own network of agents.<sup>61</sup> Becoming an agent requires an investment of KES40,000 (US\$430) and a registered, duly licensed business in town. Postbank can only take deposits, but cannot lend.
- Co-operative Bank has a network of co-operatives that it can use as agencies.
- Equity Bank is known for offering financial services to a lower-income clientele. The bank has a large retail network and a regional footprint (Kenya, South Sudan, and Uganda). It already operates the M-KESHO bank account in co-operation with Safaricom's M-PESA. It also has a co-operation agreement with Orange Money, which operates on a shared real-time platform with its agents, allowing customers to deposit cash into their Orange Money account and then access it immediately at an Equity branch or ATM. In this case, the shared infrastructure protects data integrity, reduces operation costs and keeps transaction fees low.

Kenya currently has a total of 1,072 retail bank branches. In contrast, Safaricom has more than 20,000 M-PESA agents. But even with the outreach created through agency banking, banks face a challenge in matching that network. KCB, which currently has 170 branches and 400 ATMs, aims for 2,000 agents by the end of 2011. Its customers are charged KES20 per deposit (which goes to the agent), and KES70 for a withdrawal (split evenly between the bank and the agent).

At the moment, agents mostly offer withdrawal and deposit services. This amounts to little value beyond what M-PESA provides. However, it is expected that collecting loan applications will soon play a bigger role. Equity Bank plans to grant loans to customers through agents based on a scoring system, so that clients do not need to

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visit a branch. The bank says it has already pre-scored two million clients. Mortgage lender Housing Finance also plans to move into agency banking to increase deposits, bring interest rates down and sell home financing services in rural areas. If realized, this will be an important step toward expanding formal assets among relatively poor rural communities. Homes are a key asset class that is under leveraged throughout Africa. The ability to take a loan against a house will also enable entrepreneurs in rural areas to raise capital to start a business.

Infrastructure constraints like spotty mobile connectivity and erratic electricity supply in rural areas have not interfered with the real time system. All transactions are currently conducted via the mobile banking platform, which means there is no need for a constant power supply. When POS systems are put in place, those will also connect through the mobile network.

Transaction costs are still relatively high. KCB's KES70 (US\$0.75) withdrawal charge could be too high for someone who earns around US\$2 a day. However, M-PESA has accumulated 14 million clients even with the KES35 transaction charge.<sup>62</sup>

### **Socio-Cultural Factors**

As elsewhere on the continent, there has been a significant amount of rural-urban migration as people move to the cities in search of work and other opportunities. Kenya's current urbanization level stands at nearly 40% of the population.<sup>63</sup> Mobile money helps to bridge the distance, and has sustained the flow of resources from urban to rural areas. This also applies internationally, and the market for remittances is sizeable. In March 2011, the Kenyan diaspora sent home a record US\$71.6 million. In 2010, US\$641.9 million were sent to Kenya in remittances.

The Kenya National Adult Literacy Survey (KNALS), carried out in 2006 by the Kenya National Bureau of Statistics (KNBS), the Department of Adult Education, UNESCO Nairobi and other partners,<sup>64</sup> indicates an average adult literacy rate of 61.5% and a numeracy rate of 64.5%. Female literacy and numeracy are slightly lower at 58.9 % and 61.4 % respectively, compared to men's 64.2 % and 67.9 %. There can be wide discrepancies between urban and rural areas. Nairobi, the capital, had a literacy rate of 87.1 % compared to 9.1% in North Eastern Province. The age group of 15 to 19 year olds had a literacy rate of 69.1%, indicating that it is rising gradually in the younger generation. This appears to be confirmed by UNICEF data showing higher literacy levels for 15-24 year-old men (92%) and women (93%) from 2004 to 2008.<sup>65</sup>

## Challenges

Mobile money has been a key player in financial inclusion. Even though the service is clearly not just used by the unbanked, it does provide those without access to a financial institution with a safe and affordable means of storing and transferring money. Given the pioneering character of M-PESA, Safaricom and the regulatory authorities have worked through several challenges:

### Regulatory Issues

Safaricom has emphasized the need to maintain a close relationship with the central bank in order to build trust and to be allowed to pilot such a new service. The current CEO, Bob Collymore, stated that Safaricom had a close and co-operative relationship with the regulator, the Central Bank of Kenya (CBK), and ‘we behave as if we are regulated.’ Michael Joseph, his predecessor, also emphasized the value of a continuous dialogue with the central bank.

Specific issues were addressed as follow:

- **Customer protection:** Mobile operators do not manage cash deposits themselves, so the need for regulation and supervision is limited. Funds are held in a trust account with a fully regulated commercial bank or, in the case of M-KESHO, in individual bank accounts. Funds are also covered by deposit protection.
- **No intermediation:** Safaricom does not practice intermediation (the process in which a bank accepts deposits from clients, pools them, and then lends them on). To date, all services are classified as money transfers, although the M-PESA account is a facility in which money is kept for safekeeping.
- **Fraud prevention:** Safaricom has taken additional measures to prevent fraud, including quarterly audits of the system.
- **Money laundering:** All M-PESA customers need to register for the service with their ID, fulfilling the basic Know Your Customer (KYC) requirements.<sup>66</sup> There is a cap on the amount of money that can be sent in a single transaction and per day. Since these are still relatively low (currently KES70,000 per transaction and KES140,000 per day), this makes it less useful for money laundering. Safaricom also screens transaction data for suspicious patterns and has a quarterly audit.

The CBK is now looking at licensing standalone mobile money transfer operators who would not have to team up with a bank partner,<sup>67</sup> but the Bank admits that this could expose clients to fraud, so the operators would have to be closely supervised.

### System Interoperability

To date, the system is semi-open. It is possible to send an M-PESA payment to non-Safaricom subscribers. The recipient can pick up the cash from any M-PESA agent (much like a payment sent to a non-registered Safaricom number), but the transfers cannot go into a competitor’s mobile money account. The fees are slightly higher than sending the money to another M-PESA account.

This had been challenged by the other operators who demanded interoperability of the mobile money systems and also asked to be given access to Safaricom’s extensive agent network. Although interoperability could lower the transaction costs, CBK has decided that Safaricom’s competitors would have to show similar investments in their agent network before the regulator would insist on interoperability.<sup>68</sup>

## Agency Banking

Experiences with agency banking are still very limited, but a few suggestions regarding the challenges have already been made:

- There is some skepticism regarding how well banks can manage risks remotely. The liability between the agent and bank must be well established.
- The liquidity and credibility of the agent must be ensured (i.e., preference will probably be given to SACCOs and large well-known companies with solid cash flows).
- CBK regulations clearly state the need for agent training and enforcement of anti-money laundering standards.
- Banking agents can sign contracts with multiple banks, but mobile money agents are exclusive, which means that Safaricom still controls the vast majority of the current agent network.
- Equity Bank's director for mobile money argues that regulators should consider equal access to the delivery channel – i.e., mobile phones – and interoperability of agents. He thinks that banks depend on telcos for the channel, but they ultimately have competing products. Banks must pay network operators for every agent transaction at an additional cost for banks. This is particularly relevant as Safaricom plans to continue competing with the banks; the company is now looking at a scoring model based on airtime and M-PESA usage to add personal loans to its range of mobile financial services.
- Liquidity management is still difficult (insufficient float, e-float).
- There have been increasing incidences of fraud. Fraudsters use fake lottery wins or other scams to con people into sending money. A newer trick is to send a fake message confirming a deposit, after which a caller pretends to have sent money to the wrong number, and asks for the money to be returned. None of these are the operator's fault, but could lead to distrust and a backlash against the system.

## Financial Services Sector Impact

The strength of M-PESA is driven by several factors:

- **Market-based nature:** M-PESA is a service that has been rolled out by a company as a genuine service to its clients, not a CSR initiative, and it was not restricted to low-income clients. As it is used across income groups, volume and revenues are higher, which strengthens the overall system.
- **Strategic value:** Since management saw it as a strategic investment in a new service, it has received attention and investment in the technology, agent network, training, branding and marketing. Mobile banking needs high volumes to become profitable, so a company needs dedication and commitment to the services, and needs to invest not just in the technology, but also in the brick-and-mortar aspects of the business.
- **Commitment to security:** Close attention to the security of the system is also crucial, as is a wide agent network across the county to assure clients that they can easily make deposits and retrieve their funds.
- **Cooperation with central authorities:** Close co-operation and consultation with the central bank helped to build trust so that the regulator would allow the mobile operator to pilot this new money transfer service. It also helped offset pressure from the banks.

M-PESA's early adopters were not the low-income demographic, but it quickly spread to a clientele with no access to formal financial services. M-PESA stores cash securely, and rather than hand over cash to, for example, a bus company or a courier company, the transfer can be made electronically, safely and quickly. This has changed the financial landscape for a large number of citizens and created a society-wide impact.

This impact is multi-faceted. With over 20,000 agents across the country (compared to just over 1,000 bank branches), its massive expansion of access to simple financial services is obvious. At the end of March 2011, 13.8 million people were registered M-PESA users. This is one third of Kenya's total population. And although agency banking will lead to a marked expansion of bank outlets, traditional branches cannot rival the spread of mobile money agents. While banks have focused on reducing transaction fees, in rural and sparsely populated areas, the wider agent network means that non-fee transaction costs (e.g., having to travel long distances to a bank branch) are also lowered significantly.

The expansion of mobile money services has also lowered the formal and informal barriers to entry into financial services for low-income consumers. It is easier to walk into a local retail outlet (a pharmacy, airtime vendor, etc.) than an imposing bank building. Apart from the initial registration, no forms need to be filled in, so literacy requirements are limited. The M-KESHO linkage between an M-PESA account and a bank account similarly expands access to more financial services. Since deposits and withdrawals to the bank account can be made through an agent, clients no longer have to visit a bank branch in order to have access to savings account and a small overdraft credit.

Other positive side-effects of the spread of mobile banking are becoming clear. The mobile money/bank linkage draws more cash from the informal sector into the formal financial sector where it is available for intermediation. Thus, there are additional funds for onlending. It also increased the velocity of money. The rapid success of mobile money has also forced banks to take another look at the lower end of the retail sector. While they will not compete for the poorer clients, banks have certainly realized that if they do not make an effort to move downmarket, these clients are likely to be lost to the rapidly evolving mobile money services. As such, mobile money created a level of competition that has led to an improvement in retail financial services for lower-income clients. Yet there is not just competition, but also co-operation between mobile money service providers and banks. Formal links between the two entities reduce the banks' resistance to the new service and provide access to a broader range of services, including full-fledged banking services, for mobile subscribers.

Finally, mobile money is a platform on which additional financial services like insurance can be delivered. Health and crop insurance are currently being piloted. Insurance policies can be taken out even for very limited periods of time, which makes the policies more affordable. In a trial, weather-indexed crop insurance is automatically being sold with seeds or fertilizer. If rainfall falls below set levels, payouts are made via mobile money without any further paperwork. This lowers the transaction costs for the insurer and makes it possible to serve smaller clients.

## Opportunities

### Technological Innovation

Kenya has a very active ICT and developer community, which has facilitated innovation around mobile money services. Payment platforms like PesaPal provide services for merchants and other organizations dealing with bulk payments, including the nascent e-commerce sector. They typically provide a platform that integrates bank, card and mobile payments. PesaPal has a co-operation with Safaricom on school fee payments. Using M-PESA makes it easier for parents to pay school fees as they no longer have to queue for hours at the bank. Relatives abroad can also use bank transfers or credit card payments to pay school fees in Kenya. In addition, operator-independent systems are being developed (e.g., by Craft Silicon), although their ability to compete with Safaricom, especially with regard to marketing and the agent network, is in question.

## **New Products and Services**

Mobile money has enabled other financial services targeted at a low-income clientele:

- **Loan repayments** can be made through mobile money services. The first mobile-money-only MFI has been set up in Kenya.
- **Health insurance** is now available as a mobile money service. Smallholder crop insurance makes payouts by mobile money.
- **Government payments** could be a huge market. Social transfer payments, pension payments, and teacher salaries could all be delivered via mobile money services. Orange has started paying Telkom pensioners by Orange Money.

## **System Interoperability**

In an industry where market share is more evenly distributed and mobile operators have a similar commitment to investing in mobile money services, an interoperable platform can bring costs down, which will benefit subscribers. Such a platform could also, like a national payments system, be regulated and supervised by the central bank. In Kenya, the regulator has chosen to respect Safaricom's considerable investments in intellectual property and an extensive agent network rather than force the operator to open up its system.

## **Cross-Border Payments**

A co-operation agreement with Western Union allows M-PESA subscribers to receive international remittances into their mobile money account. To date, the reverse – sending money out of Kenya – is not yet possible. Since Safaricom is a one-country operator, cross-border payments out of Kenya will remain a challenge that will be easier to overcome for operators like Orange or Airtel who serve several African countries.

## **Integration with the Banking Sector**

In the beginning, there was much speculation that Safaricom would go into direct competition with retail banks, even though the mobile operator argued that their intended target clientele were mostly people with no access to formal financial services. This may well have been Safaricom's initial intention, but it turned out differently. M-PESA is used across demographic strata and there is a good bit of overlap between M-PESA and bank clients.

Kenya has a relatively advanced financial sector, including a retail banking sector that has expanded quite aggressively over the past few years. Undoubtedly, the banking sector felt pressure from the rapid growth in mobile money services, and CEOs of leading banks now argue that a linkage with mobile money is no longer optional. However, if this relationship works to the benefit of the banking sector, the financial industry is less likely to lobby against the introduction of new mobile money services. In Kenya, mobile money/bank integration offers a number of advantages:

- Mobile network operators can offer additional financial services beyond money transfers and merchant/bill payments. Similarly, banks would have access to a far larger number of clients and an agent network vastly larger than what they could mobilize in the medium term.
- Through the M-PESA/M-KESHO link, clients have access to genuine saving services by being able to transfer money from their mobile money account to a bank account where they receive interest on savings. The first partner was Equity Bank.
- The next development will be loan services. After registering with some form of approved identification, a mobile subscriber can be located through a registered SIM, and his/her transaction history can be checked. Past transactions include the amount of airtime purchased and used, funds moved through M-PESA, and linked bank account activity. The existing client data provide the

information for a basic scoring system. To obtain a loan, a client needs a certain amount of savings against which he/she can borrow, and that will be retained as a security (e.g., clients can borrow up to 150% of their savings).<sup>69</sup>

- The link between mobile money and banks brings cash from the informal into the formal sector, where it is available for financial intermediation. It also accelerates the velocity of money.
- In addition to the more recent co-operation with banks on retail accounts, mobile operators need to have corporate banking relationships. Since they are not licensed financial institutions, they cannot hold any of the cash that is transmitted through the system; mobile operators merely provides the data services. In addition, commercial banks act as super-agents to provide more float for agents. Both offer additional business opportunities for the banking sector.

## Conclusions

The example of Kenya offers lessons to policy makers on both the conditions and policies that have allowed an innovative ICT-based financial service to scale, with positive effects on the rest of the financial services system. Kenya's market-oriented business environment and its innovative telecommunications sector have enabled competition to respond to the new entry, and ICT remains a government priority. These conditions and policies support the development of other services that use mobile money (e.g., micro-insurance), giving an additional boost to mobile money providers. Policy makers have also been relatively flexible in their approach to experimentation. The central bank was willing to support a mobile money pilot and find a balance between regulations, oversight, and enough room for the mobile operator to experiment. Finally, due to M-PESA, the banking sector has recognized that there is money to be made by offering services to lower-income consumers. There is both competition and co-operation between mobile money and the banking industry, but banks have recognized that it is useful for clients to connect their mobile money account to their bank account, and the potential to increase their revenues has helped to reduce their opposition to mobile money as an immediate competitor, while increasing the offerings available to consumers.

The competitive impact of Safaricom's market dominance may not make for an ideal market structure, but in the case of mobile money, it gave clients the reassurance that they would find a Safaricom outlet everywhere in the country where they can retrieve their cash. In addition, consumers are so familiar with the ubiquitous brand that they feel safe entrusting it with their funds. Safaricom also treated mobile money as a profitable service, not a CSR project, and therefore invested the necessary resources to develop it. This is something that policy makers in other countries should consider when studying ways to allow room for innovation. The company also invested heavily in branding, marketing, a simple user interface, and system safety and security, while also constantly expanding its offerings (e.g., merchant and bill payments, receipt of remittances, and introduction of a prepaid Visa card). Finally, the company has engaged in regular, proactive conversation with regulators like the central bank. That has allowed the company, and others, to expand their service offerings to customers while reassuring regulators that appropriate safeguards are in place. Thus, the Kenya example offers guidance to both public and private-sector actors, and illustrates the importance of a multi-sector approach.

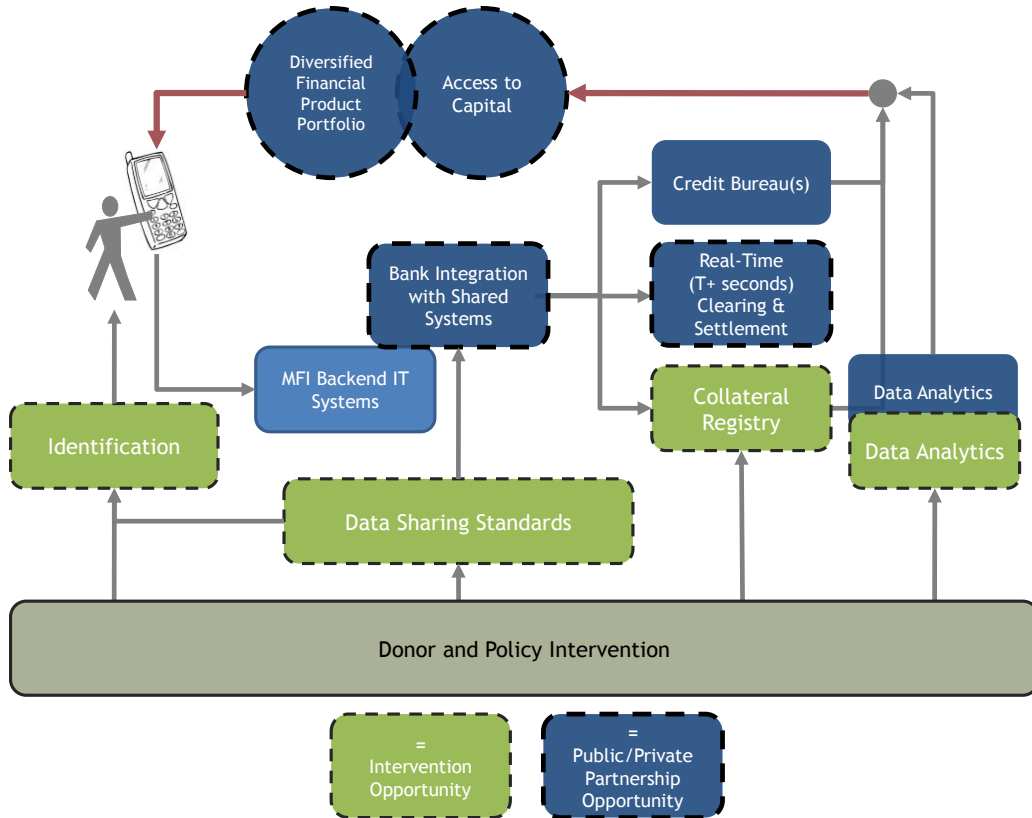
Table 2: Kenya: Opportunities for ICT to help address financial services sector challenges

Financial Sector Development Challenges	Opportunities for ICT to help address financial services sector challenges					
	Data Storage and Sharing	Data Transmission	Device Advances	Security	Data Processing and Analytics	Marketing and Branding
<b>Consumer/End User Challenges</b>						
Transient populations	√	√	√	√	√	√
Remote populations		√	√	√	√	√
Understanding of consumer behavior and makeup	√		√		√	√
General literacy			√			
Financial literacy			√			√
Trust of banking institutions (exposure and history)				√		√
Capital access (SME/MSME)	√		√		√	√
<b>Governing/Regulatory Challenges</b>						
Documentation requirements	√	√	√	√	√	
Inadequate client protection	√	√	√	√	√	
Complicated legal infrastructure	√	√		√	√	
<b>Market Maturity Challenges</b>						
Cost of established/conventional practices	√	√	√	√	√	
MFI narrow product approach	√	√	√	√	√	√
Interoperability, network cooperation	√	√	√		√	√
Cost of established/conventional products	√	√	√	√	√	√
Exposure to poor/unbanked markets/customers			√		√	√
<b>Underpinning Financial Systems</b>						
Backend operations at MFIs and smaller banks	√	√		√	√	
Availability of credit bureaus	√	√	√	√	√	
Collateral registry	√		√	√		
Real-time payment processing/settlement (T+ seconds)	√	√	√	√	√	
Broader international banking integration	√	√	√	√	√	√

## Chapter 5: Recommendations to Policy-makers and Regulators

Thus far, this report has explored challenges alongside opportunities that can propel the financial services sector and further the goal of financial inclusion by exploiting the immense potential of ICT. This section outlines specific policy interventions that could affect a coordinated systemic transformation that brings together governments, donors, and the private sector. Chapter 3 concluded with an overview of key opportunity areas (see diagram below) where strategic policy and donor interventions can play a critical role in advancing Africa’s financial services sector by leveraging information and communication technologies.

Figure 2: Interconnection among financial service solutions



This chapter offers a framework and specific policy guidance to help realize these opportunities, with a particular focus on addressing untapped low-income market demand and growth potential. In a similar manner, Chapter 6 will delineate guidance for the donor community.

### Guidance Framework

For both national policy makers (including regulators) and international donor recommendations, the guidance in the following two chapters is organized along two vectors, and divided into the seven opportunity areas mentioned above and discussed in earlier chapters:

1. Recommendations are ordered according to the various states of maturity in which various African countries find themselves in each of the different opportunity areas
2. Recommendations are classified according to whether they address consumer challenges, governing support, or private sector and supporting infrastructure

### State of maturity

No two countries in Africa are starting from the same point when it comes to reaching the desired state of financial services. Recommendations need to accommodate the fact that for each area, some nations are only beginning to pursue an opportunity while others are in a better position to scale endeavors already underway. For the purposes of this report, recommendations are categorized into the following three states of maturity:

- *Formative state* – Ideas for new products and services are being tested; regulations allow new services and business models to continue until initial trial findings are available. Approved services have not yet gained mass adoption and competing solutions are only beginning to enter the market.
- *Scaling state* – Early products and services have proven viable; regulations provide transparent guidance for market participants to enter and engage in a new market area.
- *Desired state* – Market exhibits broad adoption and usage of a product or service; the policy environment supports a healthy and transparent competitive environment.

### Recommendation area

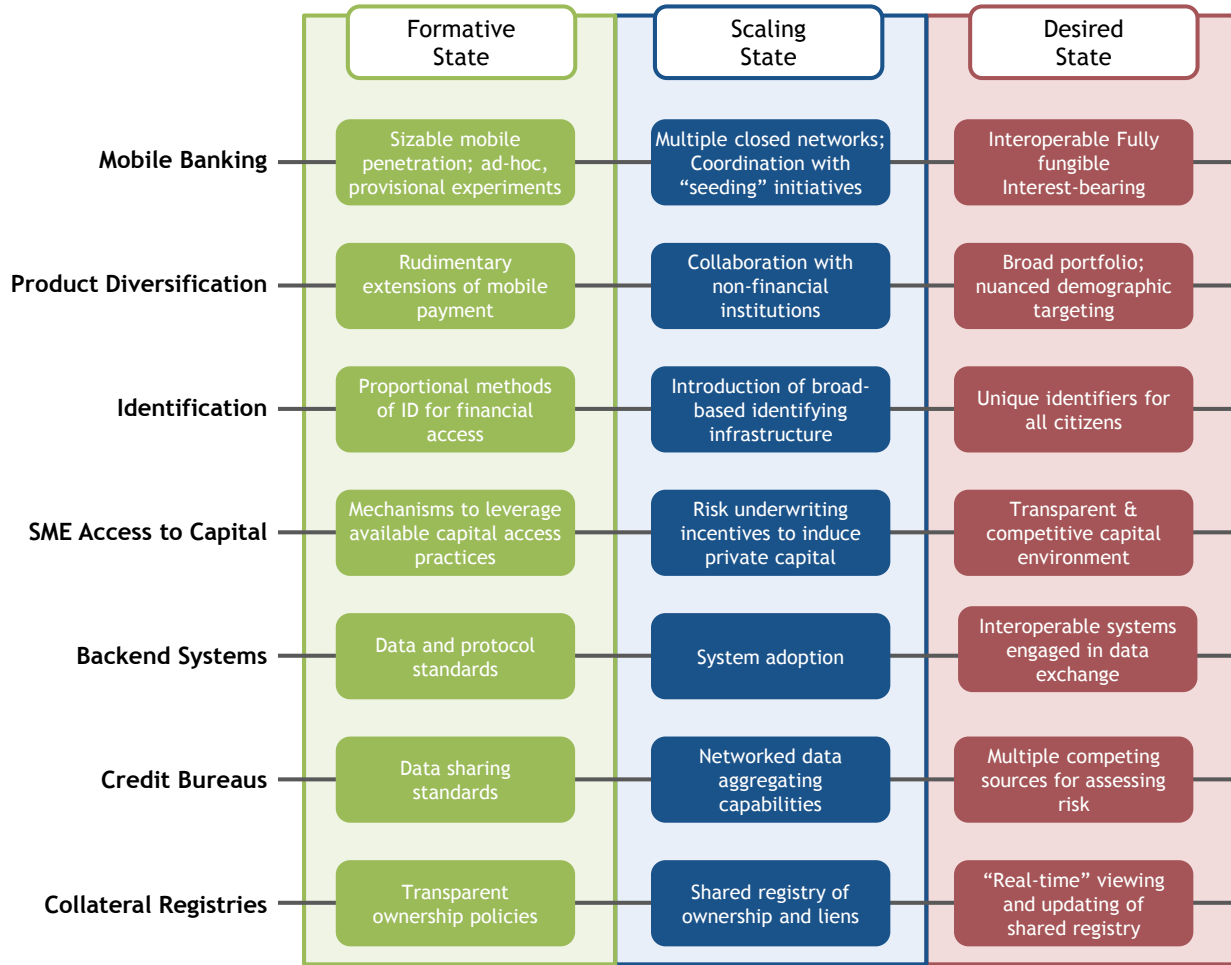
Throughout this report, challenges, opportunities and recommendations have been organized by relevance to one of three need areas:

1. Consumer challenges/readiness
2. Public sector/regulatory challenges/support
3. Market maturity and underpinning systems

### Maturity Stages for Opportunity Areas

Applying the framework to the seven identified opportunity areas offers guidance for aligning policy and donor engagement. Policy-makers are best served by using the matrix below to map the state of maturity of their financial services system, then determine the set of policy actions they should take. The policy recommendation section that follows uses these guideposts as a framework.

Figure 3:



## Policy Recommendations

### Mobile Payments/Banking

Commitment to poverty reduction and development on a national level form the basis of a commitment to financial inclusion. Recognizing the exponential opportunities presented by mobile payments and banking is the foundation for optimal policy design. The following are essential ingredients of any policy designed to move toward a more accessible and scalable mobile payment and banking environment:

Formative State Recommendations	
Public Sector Focus	<p>Examine policies that restrict market participants from engaging (e.g., are MFI's permitted to hold deposits? Are mobile operators permitted to accept deposits?).</p> <p>Encourage experimentation on a provisional basis by easing procedures for testing new approaches, while processes for allowing permanent approval are reviewed.</p>
Scaling State Recommendations	
Private Sector Focus	Coordinate awareness-raising sessions or forums with third-party organizations that conduct transacts with target markets (G2P, agribusiness, product distribution, health care), which could leverage payment and banking solutions and help them scale more quickly.
Consumer Focus	Encourage rules and legislation that prevent monopolies (e.g., exclusive agreements for cash in/out points) that would inhibit other parties from entering and sustaining the market, especially for simple transactions that compete with cash.
Desired State Recommendations	
Private Sector Focus	Encourage interoperability by developing data and process standards specific to new areas of financial services, such as mobile financial services
Private Sector Focus	Consider introducing a real-time mobile transaction clearing/settlement switch in order to remove the bottleneck when shifting to an open network (as done in India and Bangladesh)

Diversified Mobile Financial Services

Product success depends on the providers’ ability to understand and respond to consumer and business demand. Generic single products or constricted services leave latent and explicit demands unmet or even discourage uptake and participation. Socio-economic conditions specific to a country’s environment should drive the type of products made available (e.g., Islamic finance), rather than regulations that determine the choices offered to consumers. Cash-in/cash-out, bill payments, deposits, savings, remittances, insurance, provident funds, and loans are examples of products that can be offered on mobile and other platforms, and national policies should provide incentives to institutions and agents that offer diversified services via mobile platforms.

<b>Formative State Recommendation</b>	
Public Sector Focus	Temporarily ease policy restrictions that determine the types of products offered by non-financial institutions.
Public Sector Focus	Establish monitoring and evaluation processes for experiments or trials that allow policy makers to understand and quantify gains and losses and make appropriate course corrections for longer-term interventions.
<b>Scaling State Recommendations</b>	
Public Sector Focus	Initiate longer-term policy interventions based on lessons from experiments or trials.
Consumer Focus	Start consumer awareness and financial literacy campaigns that show the financial benefits of mobile payments and banking while promoting appropriate government regulation of these services.
<b>Desired State Recommendation</b>	
Private Sector Focus	Define competition terms, protect consumers, and ensure affordable cross-platform delivery of products through open systems that encourage participation by multiple players.

SME Access to Capital

Promoting growth and fostering SME success requires transformative policies that pay particular attention to the ripple effects that SME capital access has on the overall economy. These effects include increased employment, asset building, and more tax revenue. Where necessary, governments and donors should help to lower the fear of risk among bankers by providing measured loan guarantees like, for example, the Small Businesses Administration<sup>70</sup> in the United States does. Such programs can also be complemented by making training available to SMEs in financial management, innovation, and marketing.

<b>Formative State Recommendation</b>	
Private Sector Focus	Similar to product diversification, introduce policies friendly to limited or initial experimentation with new ICT-enabled SME capital-raising channels (e.g., Prosper, Kiva).
<b>Scaling State Recommendation</b>	
Private Sector Focus	Introduce risk guarantee subsidies that promote lending to first- or second-time borrowers (or for a next stage of lending) via innovative or low-cost channels.

Identification

A recent recommendation by the intergovernmental body, Financial Action Task Force (FATF), confirms that applying “an overly cautious approach to Anti-Money Laundering/Counter-Financing of Terror (AML/CFT) safeguards” can negatively impact underserved groups in developing countries.<sup>71</sup> As explored in chapter 2, absence of, or limited proximity to financial institutions is not the only barrier that keeps poor customers from accessing financial services. Identification flexibility for small transactions is a crucial policy component that should be seriously considered. Incentives aimed at making services widely available should come before mandates to obtain identity documents such as a national ID, driver’s license, proofs of residence, or passport.

Formative State Recommendation	
Public Sector Focus	Embrace risk-based methods of identification for establishing new financial accounts; mitigate risk by limiting balance and transfer amounts and increasing capabilities with greater evidence of identity.
Scaling State Recommendations	
Public Sector Focus	Undertake national identification initiatives that can use low-cost services to register and identify users; study the feasibility of biometric options.
Public and Private Sectors	Encourage citizen participation in identification enrollment through a mix of incentives and requirements; provide incentives by pairing with useful services (G2P payments and advertising); require by linking to activation of SIMs.
Desired State Recommendation	
Private and Public Sector Focus	Make various options of identification available and usable as an entry-point identification tool.

Back-end Systems

Detailed guidelines rather than mandatory rules would be most helpful to streamline the back-end systems that should be installed and managed across institutions. A banking technology coordinating group within central banks, ministries of finance/development, or independently operating offices can select and acquire technologies that enable financial inclusion. This body would monitor and outline the latest and most strategically relevant back-end systems, including mobile banking components, and interface with technologies used by different institutions. This group can also ensure that the systems are backward compatible, affordable, usable, and easily maintained or customized by local technicians. Institutions could be strongly encouraged or even required to become members, much like their participation in clearance and settlement systems in many countries.

Scaling State Recommendation	
Public Sector Focus	National, and where possible international, clearinghouse and certifying body(s) for backend system technologies to adhere to standards and principles for interoperability and consumer protections.

### Credit Bureaus

Policies should aim to address the problems presented by fragmented, stand-alone, or non-existent credit bureaus that complicate lending for institutions as well as beneficiaries. It is important to establish a useful database system and maintaining transparency for both lenders and borrowers. Having such a system ensures uniform management of data produced by a group of credit bureaus and lending institutions.

<b>Formative State Recommendations</b>	
Public and Public Sector Focus	Develop data standards and practices for generating and aggregating credit data. Examine alternative forms of data for discerning credit-worthiness; cash payment behaviors (mobile top-off, durable good layaway payments); consider making it obligatory for national utilities to make payment data available to credit bureau services.
<b>Scaling State Recommendation</b>	
Public Sector Focus	Support data availability by promoting integration of mobile payment processors to credit bureau databases, focusing on merchant and bill payment data.
<b>Desired State Recommendation</b>	
Private Sector Focus	Promote ecosystem-wide data standards and sharing.

### Collateral Registries

Creating a single national registry that hosts and manages a database of borrower assets would provide greater access to capital, particularly for small businesses. The database should be accompanied by policies that recognize non-movable assets, protect consumers, and ensure transparency.

<b>Formative State Recommendation</b>	
Public Sector Focus	Create transparent, predictable property ownership and transfer policies.
<b>Scaling State Recommendation</b>	
Public Sector Focus	Sponsor RFPs to develop and maintain single national registries with adequate protection for consumer privacy.
Public and Private Sectors	Introduce IPv6 addressing to movable goods for collateral registry purposes, trialing advances in low-cost RFID and QR-code solutions.

## Priorities

The financial services sector is a complex ecosystem. No single part of the sector can easily be addressed in isolation, and there is no “one size fits all” solution for all countries. From that point of view, each nation will view the recommendations offered here through their own lens when determining their priorities. Some areas justify greater attention due to the degree of maturity of the existing financial services sector and the existing policy/regulatory environment.

**Formative State** – In countries where financial inclusion is at an early stage and the number and capacity of institutions is low, priorities will be determined by a detailed analysis of where existing policies fall short. In addition to improving technological infrastructure, some focus areas include expanding SME access to capital by instituting risk guarantees and subsidies to borrowers, together with better diversification of products. Policies that permit experimentation, multi-institution and agent participation, credit bureau coordination, and centralized collateral registries rank higher. Metrics to determine satisfactory progress should be based on the size of the market, increased footprint, and market players.

**Scaling State** – Once the minimum components for larger financial inclusion are in place, or in countries where there is broader licensing for financial and non-financial institutions (and their agents), the logical priorities are intensified customer recruitment and boosting technological capability to meet the growing demand. In this stage, customer identification becomes crucial. Whether by introducing national IDs accessible to all citizens, allowing alternative forms of identification such as letters from village elders, relaxing requirement for small transactions, or permitting service providers (banks, MFIs, telcos, and agents) to issue IDs by capturing data on unique identifiers, policy considerations should address identification barriers to reach scale. Product diversification should also be prioritized in order to attract more customers through a closed or semi-closed system with greater interoperability.

**Desired State** – Minimum prerequisites and scale are less of a concern at this level of maturity than interoperability and a diverse portfolio of products that meet a spectrum of demands. Products should evolve to match changing socio-economic conditions in a fair competitive environment. Policies at this state need to ensure that a more robust market benefits customers by lowering costs and allowing customer to use different services without limitations of place, time, or the type of agent they use.

State of Maturity \ Focus	Consumer	Public Sector	Private Sector
Formative State	<ul style="list-style-type: none"> <li>Product diversification</li> <li>Wider consumer identification options</li> </ul>	Engage in policy experimentation in: <ul style="list-style-type: none"> <li>data standardization and alternatives</li> <li>transparent property ownership</li> </ul>	<ul style="list-style-type: none"> <li>Diversify products and capital raising channels</li> </ul>
Scaling State	<ul style="list-style-type: none"> <li>Raise overall awareness</li> <li>Incent and require obtaining ID</li> </ul>	<ul style="list-style-type: none"> <li>Remove artificial levies on technologies</li> <li>Mandate IPv6 transition and compliance</li> </ul>	<ul style="list-style-type: none"> <li>Minimize monopoly and ramp up interoperability</li> </ul>
Desired State	<ul style="list-style-type: none"> <li>Ensure competitive environments and consumer protection</li> </ul>	<ul style="list-style-type: none"> <li>Policy conducive to integrated financial services in place</li> </ul>	<ul style="list-style-type: none"> <li>Full-fledged Interoperability</li> <li>Platforms for basic payments as semi-public products</li> </ul>

### Transition Coordination

The above priorities can be applied differently or in varying combinations. What drives progress, however, is coordinating the transitions from one milestone (or state) to another. For this purpose, it is important to set up a national learning center that compiles and analyzes best practices and challenges. This center can also synthesize feedback and promote communication and problem solving among implementers. On a larger scale, the transition coordination center can work with counterparts from regional organizations like BCEAO or economic unions. Regional coordination may be facilitated by shared socio-economic characteristics (such as language, culture, cross-border economic ties). Organizations like the African Development Bank can also gather, integrate, and disseminate information.

The process of transition towards a fully ICT-enabled financial inclusion environment is not linear, and the solutions are not uniform. Realities in each country define the priorities that should be tackled first and how they should be configured to align with broader strategies. Similarly, driving transformation requires orchestrating the active participation of all interested parties, including governments, the private sector, donors, and consumers. Ideally, these parties will collaborate in the design, implementation and revision of policies. The building blocks of a transformed financial services sector are flexible early-stage policies, encouraging the most promising solutions to scale (products, processes, and technologies), and maintaining healthy competition.

## Chapter 6: Recommendations to Donors

This chapter follows the same structure used to organize policy recommendations in Chapter 5. Donor recommendations target the most strategic and beneficial points for investment considering the common barriers that affect market participants’ ability or willingness to satisfy sector needs. This includes considering upfront risk that results from lack of market knowledge or feedback loops, entering unproven territory for new product and service concepts for historically neglected market segments, and supporting infrastructure or necessary systems that may not be immediately monetizable because they depend on other under-developed aspects of the ecosystem. Logical points for public/private partnership are also considered. Further, and specific to the multi-lateral nature of the eTransform initiative, consideration is given to where donor involvement may benefit from multinational collaboration, either for cost savings, achieving critical mass, or interoperability.

The following recommendations are specific to the application of ICTs to the financial services sector. There are arguably even higher priorities for the donor community as it works to improve Africa’s access to ICT services more generally (e.g., expanding electrification, literacy rates, and redundant backbone infrastructure). The success of any financial service sector interventions will be proportional to the progress in addressing underlying elements.

Donor involvement may go hand-in-hand with policy guidance, where investment is required to execute recommended policies. For this reason, some overlap exists with recommendations to national policy makers and regulators, and these interdependencies are noted.

### Mobile Payments/Banking

Donors have a role to play in mobile payments by accelerating the transition from closed network to open network models. All network-based financial products and services started as proprietary, closed-network solutions, then evolved to competitive differentiation. This was true in developed countries for retailer charge cards that were later replaced by credit card networks and automated teller machines (ATMs). Mobile payments in Africa are following the same path. As a product becomes more widely introduced and commoditized, there is a business case for supporting interoperation to gain additional values from interchange fees and increased overall transaction volume. In this scenario, the question for policy makers and donors alike is: “What can be done to accelerate the transition from closed to open networks, and offer access to the edge populations that are typically served last?”

While policy makers have regulatory tools they can use, such as licensing based on population coverage and minimum service obligations, donors may choose to make investments that would lead to integration. This may take the form of real-time, inter-carrier payment clearing and settlement investments, or incentivizing adoption by working with service providers to distribute donor funds to targeted consumers or small businesses. Recommendations for realizing a ubiquitous interoperable payments network that can compete with the alternative of cash-and-serve as the foundation for a broader portfolio of consumer and business financial services are:

Formative State Recommendation	
Public Sector Focus	Induce private sector involvement through goal-oriented awards for early and successful efforts to address inclusion goals through mobile banking availability (Gates Foundation incentive fund for Haiti is an example).

Scaling State Recommendations	
Public Sector Focus	Deliver public sector benefits programs via new electronic payment channels (G2P); consider delivery fee rewards/payments to institutions for successful direct delivery (e.g., 2% of each benefit payment to mobile transaction operator; benefit funds distributed through operator bank partners who appreciate float).
Consumer Focus	Initiate consumer awareness campaigns that convey the financial benefits of mobile payments and banking.
Desired State Recommendation	
Public and Private Sector Focus	Partner with the private sector to introduce a real-time mobile transaction clearing/settlement switch to remove the bottleneck when shifting to open network (as done in India and Bangladesh).

### Diversified Mobile Financial Services

The desired state for diversified mobile financial services is one in which information is readily available to determine new and evolving needs, and to target specific demographics. In line with the policy guidance offered in the previous chapter, the supporting role donors can play is to offer incentives to test new concepts by underwriting initial risks, guaranteeing a minimum initial market, and offering challenge rewards to address specific market gaps (e.g., a specific product type or demographic).

Formative State Recommendation	
Consumer Focus	Support incubator efforts for product designs and concepts to be tailored to consumer needs.
Scaling State Recommendation	
Private Sector Focus	Back solution competitions to address specific market challenges both in terms of product type and consumers served; consider places where donors can guarantee a minimum market for early stage efforts.

### SME Access to Capital

Donors have an essential role in reducing the risks of lending to small, unknown businesses. Loan guarantee programs are an important part of small business support efforts and donor funds could be leveraged for this purpose. The other option for donors to consider is how to remove the “unknown” from small, unfamiliar businesses. In areas where traditional credit bureaus are failing to serve SMEs (or do not exist), donors could also support alternative methods for assessing and sharing risks. Such scenarios might include leveraging crowd-based voting mechanics combined with donor-to-peer (Kiva.org) and peer-to-peer (Prosper.com) lending models to determine donor allocation of funds. These funds could be drawn from a revolving fund where allocation is determined by an SME’s ability to gather a small matching amount from community members who can judge the borrower’s reliability.

Formative State Recommendation	
Consumer Focus	Embrace and adapt crowd-based market models for determining credit allocation to SMEs with no credit history or collateral.
Scaling State Recommendation	
Private Sector Focus	Introduce risk guarantee subsidies that promote lending to first- and second-time borrowers or for a next stage of lending.

Identification

The role for donors in the identification opportunity is to underwrite costs associated with building and maintaining identification systems. India today is entering uncharted territory in building the largest ever identification database, gathering fingerprints and iris scans for its entire population. When complete, it is estimated to be over 120 times larger than any comparable solution in the world. India has an equal or greater challenge with its undocumented population, and yet has made considerable progress with the effort, now registering more than a million people each day. From an ICT perspective, if India can achieve this, so can all of Africa, which has a total continental population less than that of India.

To date, however, identification initiatives in Africa have fallen short, particularly for reaching the most excluded populations. But, with ICT advances, the goal of universal identification appears to be both affordable and logistically possible. Donors are critical to this effort, since identification is a public good and not easily monetized (except in the form of public-sector contracts for building and maintaining such systems). Secondly, addressing this challenge with the help of a multi-lateral organization would allow different nations to share experiences and build communication channels that would be valuable for managing system fraud. In the long term, it is conceivable that the entire African continent could share the technical architecture for a system similar to the initiative in India.

One vision that has been considered is to apply the strategy of unique Internet address assignments to individual identifiers. African nations would maintain sovereignty in determining what data assets to gather and serve as identifiers for citizens, and would store such data locally if national regulation requires. Such an approach would also offer a mechanism for individuals to gather and use locally-issued forms of credential (e.g., from social or business groups). These credentials would serve more limited and less risky objectives until an individual has means or incentive to attach an official national form of ID to his or her unique identifier.

Formative State Recommendation	
Consumer Focus	Invest in experiments to digitize and expand the usefulness of informal credentials of identification that can be appended to national ID efforts; such initiatives may enlist large social and business networks (farming cooperatives, tribes, clubs or other civil society institutions) to initiate the collection of identifiable data.
Scaling State Recommendations	
Public sector Focus	Undertake national identification initiatives that can use low-cost tools to register and identify; utilize advances in biometric technologies to alleviate challenges and costs of physical card distribution and management; look to India for its experiences in rolling out a large-scale identification initiative.
Public sector Focus	Promote citizen participation in Identification enrollment through incentives and requirements; Pair identification with useful services (G2P payments); require by linking to activation of SIMs.

Back-end systems

The selection of back-end systems more logically falls to the private sector, since it affects competitive positioning and costs considerations. However, donors might consider underwriting a “minimum-feature” service available via the cloud so that even the smallest MFIs and banks would be able to manage accounts. While such an initiative would have direct value for these institutions, the greater opportunity from this approach is to more readily build the store of data necessary for credit bureaus and collateral registries.

Donors would also make a positive impact by supporting the systems necessary for interconnection (real-time switches for mobile payment interoperability) and systems that pre-condition infrastructure for service delivery (identification registries). The advantage of such investments is that they work *with* rather than *against* the private sector, enabling more market participation.

**Formative State Recommendation**

Private Focus	Contract development of a minimum-feature, cloud-based back-end system and its maintenance.
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Credit Bureaus

There is a “chicken-and-egg” dilemma in creating traditional credit bureaus; data in the bureaus is typically derived from loan repayment practices, but SMEs have trouble getting loans without a credit usage history. Options are to look at alternative forms of data for assessing financial behavior and predictability, such as regularity and timeliness of paying utility bills or other cash transactions. The difficulty here is that the firms that manage this data have no incentive to undertake the expense of organizing and sharing this information. Donor investments can alleviate upfront costs of sharing data and might be paired with introducing the basic back-end systems for small banks that could automate sharing data with a bureau. In these scenarios, donor intervention with ICT investments alone cannot address the challenge, as time is required for a history of data to be collected. Regardless, the only way to advance is to begin by establishing a starting point of data standards and a common repository, and then invite third parties to offer analytical services utilizing this data. While there is some logic in having competition between credit bureaus for assessing risk, there is little reason for competition in data collection. A donor-sponsored effort for data aggregation would allow the private sector to focus resources on higher-value risk analytics.

An alternative path donors can consider is to look at the evolving practices of social networks as a source for building and sharing information that can serve as an alternative form of risk reduction. This, combined with peer-to-peer lending models, presents an interesting opportunity. Donors can promote adoption by channeling funds through such platforms as a way to increase liquidity while using informal reputations to allocate funds in the form of loans.

<b>Formative State Recommendations</b>	
Public and Private Sector Focus	Support efforts to develop data standards and practices for generating and aggregating credit data; donor-funded assembly with specifications defined by private-sector participants.
Consumer and Private Sector Focus	Back efforts to examine alternative forms of data for discerning credit-worthiness, such as cash payment behaviors (mobile top-off, durable good layaway payments).

Collateral Registries

Unlike credit bureaus, there is no rationale for having more than one collateral registry for a market. There is also no distinction (other than language) to the types of data required for a multi-country collateral registry. Donor support of a universal collateral initiative would achieve significant savings and accelerate availability of registry solutions. This approach would be most promising for those countries at the formative state of development. For those with some forms of registry in place, integrating with a universal, cloud-based solution could greatly aid in scaling accessibility to institutions lacking access to isolated systems. Pioneers like Ghana might play a leadership role in forming an initiative that draws from their experience. At a minimum, sponsoring the development and adoption of registry data standards and maintenance procedures could still serve to ease the burden for private sector solution providers, banks and other institutions that need to either channel data to these registries or query them.

In addition to the creation of a common or standard registry platform, other ICT advances may be suitable for more effectively tracking movable assets. The onset of the Internet Protocol version 6 (IPv6) offers a combination of so many unique addresses that every physical asset on the planet can be assigned a unique identifying number to maintain in a registry. Combining this unique numbering system with inexpensive tagging technologies such as radio frequency-enabled stickers and two dimensional barcodes may enable the tracking of more valuable assets. While this would be an ultimate objective, accommodating these possibilities now in the structuring of registries would be advantageous.

While coordination of this magnitude can be daunting and largely a burden of policy coordination, participation and results will be minimal if the donor community does not sponsor the work and its associated systems. Equipped with lessons from the registration of movable assets, the donor community could later expand the systems to address a broader set of asset classes such as property.

<b>Formative State Recommendation</b>	
Public Sector Focus	Support efforts to coordinate development of collateral registry data standards and procedures.
<b>Scaling State Recommendation</b>	
Public and Private Sector Focus	Examine opportunities for public/private funding of single national collateral registries; prioritize opportunities for developing regional or universal initiatives.

## Priorities

As expressed previously, the financial services sector is a complex ecosystem. Each nation or donor will view the offered recommendations through their own lens when assessing their own priorities.

Nevertheless, across opportunity areas, recurring messages for donors emerge:

- Reduce private sector risks by underwriting the risk of “first mover.”
- Reduce shared costs by underwriting supporting systems that are common all financial service players.
- Leverage limited donor resources to drive private and consumer action towards desired financial service sector goals

Depending on the state and focus of a particular nation’s need, donors should focus on these priorities:

State of Maturity \ Focus	Consumer	Public Sector	Private Sector
Formative State	Raise consumer awareness; back solution incubators and heavy experimentation translating needs into products	Fund coordinating efforts; standards for data and data sharing	Engage through challenge incentives
Scaling State	Move donor benefits through ICT channels to drive adoption	Introduce support systems for financial services - identity and property registries	Fund introduction of privately managed financial services support systems - clearing and settlements
Desired State	Promote a broader and more varied product set through investment in experimentation	Financial systems infrastructure tightly integrated with administrative structures	Invest in efforts to accelerate adoption of shared systems

Nowhere is the pace of change in financial services greater than it is now in Africa. ICT is the catalyst. Daily announcements about new products and changes to Africa’s financial services landscape have become the norm. The challenge and opportunity now is to capitalize on these advances to meet the rapidly increasing demand for financial inclusion.

Donors have unprecedented opportunity to leverage limited funds to help the private sector deliver financial service solutions made possible by ICT. Given the pace of change, and the multitude of interlocking components of a vibrant financial services sector, donors will need to promote coordinated activities that will keep all actors moving forward effectively. Regional bodies and those with a specific financial sector focus, such as the African Development Bank’s Making Finance Work for Africa, will play an increasingly critical role if African nations are to achieve the benefits of cross-fertilization and cost sharing during this period of rapid growth.

## Appendix 1 – Africa’s ICT Related Policies for Financial Inclusion and Electronic Payment Capabilities

The accompanying spreadsheet contains two assessments. The first provides a review of the latest guidelines and regulations governing branchless banking and mobile payments throughout Africa. The review assesses:

- The extent to which rules exist governing bank relationships with 3<sup>rd</sup> party service providers who may offer financial services on their behalf
- Provisions for person-to-person domestic electronic transfers
- Provisions for proportional identification allowances for simple accounts to serve unbanked consumers lacking traditional means of identification

The second assessment reviews country capabilities to support real-time digital transfers through simultaneous clearing and settlement. At this time no African country offers an example of a true real-time (transaction + seconds) open transaction network. Like most other countries, true real-time transaction processing occurs only in closed network systems such as the closed mobile money services offered by carriers.

Clearing and Settlement					
Country	Proportional Service and Authentication allowances?	Clearing and Settlement Systems	Ownership (bank owned, association, central bank)	Membership	Real-Time capacity? (T+?)
Algeria	None indicated.	Télé Compensation Interbancaire (ATCI ) or Algeria Real Time Settlements (ARTS) system.	Bank of Algeria. 48 Clearing Houses, one per each governorate ( <i>Wilayah</i> ).	Banks and Financial Institutions with the approval of the Central Bank and members	Yes, as of 2006; same day.
Angola	Not specified.	Values Clearance Service (SCV), the Settlement for Major Payments Systems (for bank securities in international market and counter-value in domestic currency). Sub-systems: SPTR, MULTICAIXA, and Clearing Value System	Central Bank of Angola	All banking institutions with Reserve Accounts at the Central Bank	Yes, as of 2005; same day.
Benin	None indicated. Possibly tolerated for cash-in.	SICA-UEOMA is a region wide automated interbank clearing system with a national system for each WAEMU member state and a regional clearing system. STAR-UEMOA is the automated transfer and settlement system within WAEMU. Operationalized in 2005.	Central Bank	Members of WAEMU	No
Botswana	No specific waivers for small value transactions.	The Botswana Interbank Settlement System (BISS), the Electronic Clearing House (ECH)	Bankers' Association of Botswana (BAB) for the Electronic Clearing House; Bank of Botswana and four other commercial banks	Membership of BISS is open to all clearing banks operating in Botswana as well as the Bank of Botswana.	Yes, immediate for high value, critical transactions; same day and scheduled for others.
Burkina Faso	None specified	SICA-UEOMA is a region wide automated interbank clearing system with a national system for each WAEMU member state and a regional clearing system. STAR-UEMOA is the automated transfer and settlement system within WAEMU.	Central Bank	Members of WAEMU and country-level banks and financial institutions	No
Burundi					
Cameroon	None specified but possibly cash-in tolerated.	Système de Gros Montants Automatisé (SGMA) for wholesale settlements, Système de Telecompensation en Afrique Central (SYSTAC) for retail payments	BEAC and its representatives in member countries. Cameroon has a BEAC clearing house in Douala	Public treasuries, commercial banks, financial institutions, MFIs. <i>Note:</i> Entities without accounts at BEAC can also participate if they are otherwise known/recognized	Yes, since 2007; 24 hours for transfers and withdrawals and 48 hours for checks.
Cape Verde	No data available	The Sistema Integrado de Compensação Interbancária e Liquidação (SICIL)/ Integrated Interbank Clearing and Settlement System, Network Vinti4 for electronic retail transactions	The Central Bank of Cape Verde	The Central Bank, the Treasury, Licensed Credit Institutions	Yes, as of 2001

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Central African Republic	None specified	Système de Gros Montants Automatisé (SGMA) for wholesale settlements, Système de Telecompensation en Afrique Central (SYSTAC) for retail payments	BEAC and its representatives in member countries. .	Public treasuries, commercial banks, financial institutions, MFIs. <b>Note:</b> Entities without accounts at BEAC can also participate if they are otherwise known/recognized	Yes, since 2007; 24 hours for transfers and withdrawals and 48 hours for checks.
Chad	None specified	Système de Gros Montants Automatisé (SGMA) for wholesale settlements, Système de Telecompensation en Afrique Central (SYSTAC) for retail payments	BEAC and its representatives in member countries. .	Public treasuries, commercial banks, financial institutions, MFIs. <b>Note:</b> Entities without accounts at BEAC can also participate if they are otherwise known/recognized	Yes, since 2007; 24 hours for transfers and withdrawals and 48 hours for checks.
Comoros					
Congo	None specified	Système de Gros Montants Automatisé (SGMA) for wholesale settlements, Système de Telecompensation en Afrique Central (SYSTAC) for retail payments	BEAC and its representatives in member countries. .	Public treasuries, commercial banks, financial institutions, MFIs. <b>Note:</b> Entities without accounts at BEAC can also participate if they are otherwise known/recognized	Yes, since 2007; 24 hours for transfers and withdrawals and 48 hours for checks.
Congo, Democratic Republic of	None specified.	Chambre de Compensation de Kinshasa; manual clearance	BANQUE NATIONALE DU CONGO	Banks and Financial Institutions that have been admitted to the Chambre de Compensation de Kinshasa	No.
Cote d'Ivoire	No specific waiver but possible tolerance for cash-in.	SICA-UEMOA clearing system is made up of nine clearing systems: a domestic system for each WAEMU member and a sub-regional system for interstate exchanges. Operational in Cote d'Ivoire since 2006.	BCEAO	banks, financial institutions, regional stock exchanges, West African Development Bank, the WAEMU Interbank Card Processing Center(CTMI-UEMOA)	No. Note: Varying D+
Djibouti					
Egypt	None indicated. Possibly tolerated for cash-in.	Use of credit transfers remain limited due to the absence of a central bulk clearing system, all credit transfers are effected on an interbank basis via SWIFT's FIN COPY service ( a high value gross settlement system) with the CBE acting as the settlement agent. Transfers submitted to the CBE between 8 and 4.30pm are settled same day while those submitted after 16:30 are settled next day. CBE introduced the electronic cheque clearing(ECC) system in 2002. It plans to set up additional electronic clearing houses in the country. The ECC processes cheques on a net settlement basis; cheques are exchanged electronically and settled overnight if drawn at banks based within the same clearing house district (Cairo, Alexandria and Port Said) and within several days for all other banks ( <a href="http://www.hsbnet.com/transaction/attachments/pcm/pdf/egypt.pdf?WT.ac=CIBM_cntry_pro_sub_egypt_On">http://www.hsbnet.com/transaction/attachments/pcm/pdf/egypt.pdf?WT.ac=CIBM_cntry_pro_sub_egypt_On</a> )	Banking system includes the CBE, 24 commercial banks (4 state owned), five state owned specialised banks and 11 privately owned joint stock credit institutions. Dominated by 4 state owned institutions: NBE, Banque Misr, Banque du Caire and Bank of Alexandria	CBE, Banking Institutions	Yes, Immediately prior to settlement of a payment transaction, Real Time Gross settlement (RTGS) performs a check to determine that the participant (or participants in the case of a multi-party payment transaction. Ex a Net Settlement Instruction from a Clearing House) in a debit position has sufficient liquidity to enable the settlement to proceed. If there are enough funds (the sum of the balance in settlement account and any available liquidity generated through credit extension) for the payment to be settled, it will be settled immediately. If there are not enough funds, settlement will be rejected immediately
Equatorial Guinea	Not indicated	Système de Gros Montants Automatisé (SGMA) for wholesale settlements, Système de Telecompensation en Afrique Central (SYSTAC) for retail payments	BEAC and its representatives in member countries. .	Public treasuries, commercial banks, financial institutions, MFIs. <b>Note:</b> Entities without accounts at BEAC can also participate if they are otherwise	Yes, since 2007; 24 hours for transfers and withdrawals and 48 hours for checks.

				known/recognized	
Eritrea					
Ethiopia	No waivers for small value transactions.	An RTGS system and Automatic Clearing House for retail payments underway. The current Addis Ababa Clearing Office (AACO) system clears and settles cheques in Addis Ababa on a deferred multilateral basis.	National Bank of Ethiopia	Licensed financial institutions	Expected RTGS roll out will add real time capacity soon.
Gabon	No waivers for small value transactions per BEAC KYC/AML requirements.	Système de Gros Montants Automatisé (SGMA) for wholesale settlements, Système de Telecompensation en Afrique Central (SYSTAC) for retail payments	BEAC and its representatives in member countries. .	Public treasuries, commercial banks, financial institutions, MFIs. <u>Note:</u> Entities without accounts at BEAC can also participate if they are otherwise known/recognized	Yes, since 2007; 24 hours for transfers and withdrawals and 48 hours for checks.
Gambia	No waivers for small value transactions.	Manual and paper-based for both large value and retail payments	Central Bank of Gambia	Member banks	D+3 for local check and D+7 for up country
Ghana	None indicated	The Ghana Interbank Payment and Settlement System (GhiPSS), Automated Clearing House (ACH-- part of the GhiPSS for Direct Credit and Debit), National Switch- E-zwich	Owned by the Central Bank. The central bank occupies an important and unique position in the payment system. It is an overseer, operator and a participant of the payment system. Furthermore, prior approval must be obtained from the Bank of Ghana for the deployment of new switches, ATMS, Points of Sale (POS), card or mobile phone payments products.	Branchless banking is only allowed to be undertaken by licensed deposit-taking financial institutions (bank and non-bank) or their agents. Furthermore, all customers of FIs undertaking BB activities must be uniquely identified.	Yes, Ghana Inter-bank Settlement (GIS) system, which is a real time gross settlement system
Guinea	None specified	Manual and paper-based. Banks use certified check for interbank payments	The Central Bank	Member bank.	D+1 for certified checks and D+2 for ordinary checks
Guinea-Bissau	None specified	SICA-UEMOA clearing system is made up of nine clearing systems: a domestic system for each WAEMU member and a sub-regional system for interstate exchanges.	BCEAO	Same as members of BCEAO's SICA-UEMOA	No. <u>Note:</u> Varying D+
Kenya	None indicated. Possibly tolerated for cash-in.	Kenya Electronic Payments and Settlement System (KEPSS), Nairobi Automated Clearing House. ( <a href="http://www.centralbank.go.ke/.../Development%20and%20Regulation%20in%20PS%20in%20Kenya.pdf">www.centralbank.go.ke/.../Development%20and%20Regulation%20in%20PS%20in%20Kenya.pdf</a> )	Owned and operated by the Central Bank. The central bank is also a participant.	The central bank and all commercial banks in Kenya. Membership is open to a bank, financial institution or any participant provided they meet all the eligibility criteria and conditions provided (has a settlement account, meets the SWIFT connectivity requirements for RTGS, exchanges SWIFT authentication keys with all participants, has appropriate capacity to participate, ability to resume payment processing through the system, and comply with terms and conditions of the agreement for participating in KEPSS) <a href="http://www.centralbank.go.ke/nps/kepss/Kepps.aspx">http://www.centralbank.go.ke/nps/kepss/Kepps.aspx</a>	Yes, T+3, and T+2
Lesotho	None indicated	LesothoWire (RTGS system) for large and critical values, Maseru Clearing and Settlement House for small value payments	Central Bank supervises, CB and commercial banks, Payment Association of Lesotho(PAL)	Central Bank and Commercial banks	No
Liberia	None indicated	The Clearing House of the Central Bank of	Central Bank of Liberia	Member banks.	One daily clearance.

		Liberia(CBL)	(CBL)		
Libya	None indicated	The national payment system includes: Automated Clearing House, Real Time Gross Payment, and ATM/POS Switch	Central bank of Libya	member banks	Yes
Madagascar	None indicated	SYRCOD (a settlement system based on decentralized clearing);	Central Bank of Madagascar	Financial institutions with accounts at the central bank, the Treasury	No
Malawi	None indicated	Malawi Inter-bank Transfer and Settlement System (MITASS), Central Payment System (CPS) for government, Electronic Cheque Clearing House (ECCH), the Malawi Switch Center MALSITCH). Interbank exchange and settlement services are offered by the Reserve Bank of Malawi through the clearing house. Clearing is done twice a day from Monday to Friday. Plans are in place to introduce Real Time Gross Settlement (www.bis.org/cpss/paysys/Malawi.pdf )	Reserve Bank of Malawi (RBM) and Bankers Association of Malawi (BAM). RBM maintains the settlement accounts of commercial banks through which interbank settlement duties are met.	Open to all financial institutions but ECCH only for clearing banks. Retail electronic transactions outsourced to MALSITCH. <u>Note:</u> Membership is extended to licensed deposit taking institutions: Reserve Bank of Malawi, National Bank of Malawi, Commercial Bank of Malawi, First Merchant Bank Ltd, and Finance Bank Malawi Ltd. (www.bis.org/cpss/paysys/Malawi.pdf)	No, plans underway ( <a href="http://www.bis.org/cpss/paysys/Malawi.pdf">http://www.bis.org/cpss/paysys/Malawi.pdf</a> )
Mali	None specified but cash-in possibly tolerated.	SICA-UEOMA is a region wide automated interbank clearing system with a national system for each WAEMU member state and a regional clearing system. STAR-UEOMA is the automated transfer and settlement system within WAEMU. Operationalized in 2005.	BCEAO	Accessible to participants: banks, financial institutions, regional stock exchanges, the West African development bank of all member countries (Mali, Guinea Bissau, Niger, Senegal, Togo, Cote d'Ivoire, Benin, Burkina Faso)	No. <u>Note:</u> Varying D+
Mauritania	None indicated.	Multilateral Net	Central Bank	banks and licensed financial institutions	No
Mauritius	None specified.	Mauritius Automated Clearing and Settlement System (MACSS) established in 2000. Based on real time gross settlement ( <a href="http://bom.intnet.mu/?id=50001">http://bom.intnet.mu/?id=50001</a> ) Port Louis Automated Clearing House (PLATCH),	Bank of Mauritius	all licensed banks and Bank of Mauritius	
Morocco	No specific waivers for small value transactions.	The Moroccan Interbank Clearing and Settlement System(SIMT), Gross Settlement System of Morocco (SRBM), Card Payment Center( CMI), and the Central Depository (MAROCLEAR). There also 20 manual clearing houses	Managed by the Central Bank	member banks, financial institutions, the treasury, companies managing payments, and the postal services	Yes, since 2003.
Mozambique	Occasional, low-value transactions can be performed without ID to receive and send money domestically	The Automated Clearing House (ACH) for electronic checks and EFTs, the Government Electronic Funds Transfer System (STF), National Net Settlement System (credit and debit cards and Ponto24 for debit cards, Settlement of Stock Exchange Transactions (BVM)	Bank of Mozambique	Authorized credit institutions	D+0 for money market, D+2 for checks and Ponto24, D+1 for VISA and EFT, D+3 for BVM
Namibia	None indicated.	Payment Association of Namibia. Namibia Inter-Bank Settlement System (NISS) for inter-bank; Namibian Payment Clearance House (Namclear) for domestic electronic transactions.	A Committee consisting of bankers	Payment Association of Namibia (PAN)	
Niger	None specified	SICA-UEOMA clearing system is made up of nine clearing systems: a domestic system for each WAEMU member and a sub-regional system for interstate exchanges. Operational in Niger in 2007.	BCEAO	Same as members of BCEAO's SICA-UEOMA	No. <u>Note:</u> Varying D+
Nigeria	None indicated.	Central Bank of Nigeria introduced a Real Time Gross Settlement RTGS in 2006 as part of a initiative to move toward electronic banking	The inter-bank settlement system is equally owned by all licensed banks and discount houses in Nigeria and the Central Bank of Nigeria( <a href="http://www.nibss-plc.com/About%20NIBSS%20Plc.pdf">http://www.nibss-plc.com/About%20NIBSS%20Plc.pdf</a> )	Yes	Same day.

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Rwanda	No specific waiver of ID or authentication requirements based on proportion of money transferred.	Semi-automated clearing. The RWANDA INTEGRATED PAYMENT PROCESSING SYSTEM (RIPPS) under development.	The Central Bank and National Switch-SIMTEL for electronic transactions	Open to all clearing participants	T+1 for checks, credit and debit card. ATM and POS transactions are cleared at SIMTEL, a national shared network.
Senegal	Not specified but possibly tolerated for cash-in.	SICA-UEMOA clearing system is made up of nine clearing systems: a domestic system for each WAEMU member and a sub-regional system for interstate exchanges.	BCEAO	Same as members of BCEAO's SICA-UEMOA	No. <u>Note</u> : Varying D+
Seychelles					
Sierra Leone	Revising KYC requirements (see CGAP report).	Manual and paper-based for large value, retail payments, and securities. Stand-alone systems for ATM/POS transactions	The Central Bank	Participant banks and financial institutions	D+1 for local checks and D+6 for up country
Somalia	Flexible	None Available	Not Applicable	Not Applicable	Informal and very efficient transfers.
South Africa	None indicated.	The South African Payment System (ZAPS) for large value interbank settlements. The Reserve Bank provides same day value to banks. South African Multiple Option Settlement (SAMOS) for <u>retail payments</u> , interbank, equities, and bonds. The Automated Clearing Bureau has four main branches which account for 80% of the clearing process. There are other manual clearing houses which process settlements on a bi-monthly basis.	The South Africa Reserve Bank	Only designated direct or indirect clearing banks are participants. Non clearing banks can participate by sponsor agreements with clearing banks. Participation regulated by Payment Association of SA.	Yes, Real time Clearing implemented in 2007
Sudan	No specific waiver of ID or authentication requirements based on proportion of money transferred.	RTGS work underway. Sudan also plans to join the Regional Payment and Settlement System (REPS) of COMESA. Electronic and Manual Clearing. Sudan also has a National Payment Switch System.	Central Bank	Member banks, financial institutions	
Swaziland	Possible. KYC Requirements are being revised according to CGAP ( <a href="http://www.cgap.org/p/site/c/template.rc/1.11.142568/">http://www.cgap.org/p/site/c/template.rc/1.11.142568/</a> ). Also according to one report, no KYC required and MTN cellphone number sufficient ( <a href="http://mobilemoneyafrica.com/?p=3487">http://mobilemoneyafrica.com/?p=3487</a> )	Swaziland Interbank Payment and Settlements System (SWIPSS), Swaziland Automated Electronic Clearing House (SAECH)	Central Bank of Swaziland, SAECH owned by a group of banks	member banks	Two sessions per day.
Tanzania	None indicated; possibly tolerated for cash-in.	Dar es Salaam Electronic Clearing House (DECH) and manual clearing houses in Arusha, Mwanza, Mbeya and Zanzibar	Central Bank	Limited to licensed commercial banks. They facilitate the clearance of paper based inter-bank instruments, particularly cheques.	No, clearing may take 2 days, 7 days in upcountry and 14 days in remote areas.
Togo	None Indicated	SICA-UEMOA clearing system is made up of nine clearing systems: a domestic system for each WAEMU member and a sub-regional system for interstate exchanges.	BCEAO	Same as members of BCEAO's SICA-UEMOA	No. <u>Note</u> : Varying D+
Tunisia	No specific waivers for small value transactions. Same for bank accounts and mobile banking.	The Gross Amount Settlement of Tunisia (SGMT), Interbank Teleclearing Corporation (SIBTEL). <u>Note</u> : Tunisia is also member of the Arab Payments and Securities Settlement Initiative (API),	Central Bank of Tunisia (performs manual clearing as well) and SIBTEL, which is regulated by the Central Bank	CBT and commercial banks	Yes, as of 2006; +1.
Uganda	None indicated; possibly tolerated for cash-in for mobile banking.	Ugandan National Interbank Settlement System (UNISS)	Bank Of Uganda	commercial banks and the bank of Uganda ( <a href="http://bou.sp-svrtplsite.bou.or.ug/bou/payment_systems/uniss_overview.html">http://bou.sp-svrtplsite.bou.or.ug/bou/payment_systems/uniss_overview.html</a> )	Yes, implemented in 2005
Zambia	No specific waiver of ID or authentication requirements based on proportion of money transferred.	Zambia Inter-bank Payment and Settlement System (ZIPSS), Physical Interbank Clearing (PIC), Direct Debit and Credit Clearing (DDACC), Postilion Retail Payments Switch System	Zambia Electronic Clearing House (ZECHE), Bank of Zambia, eSwitch T/a Zamlin. <u>Note</u> : Clearing Houses are located in Lusaka and Kitwe	Commercial banks and Bank of Zambia (the central bank)	Implemented in 2004; same day.
Zimbabwe	No specific waiver of ID or authentication requirements based on proportion of money transferred.	Zimbabwe Electronic Transfer and Settlement System (ZETSS)	Reserve Bank of Zimbabwe controls clearing processes.	Bankers Clearing House Management Committee with one representative per bank (chaired by the Reserve Bank )	Implemented in 2002; same day.

## Appendix 2 – Mobile Money Deployments in Africa

The following is abstracted from the full mobile money deployment database available at:

<http://www.wirelessintelligence.com/mobile-money/unbanked/>

Mobile Money - Deployment Tracking			
Country	Operator	Name	Launched
Benin	MTN	Mobile Money	2010
Burundi	Econet Wireless	EcoKash	2010
Cameroon	MTN	Mobile Money	2010
Congo, DR	Celpay	CelPay	2009
Cote d'Ivoire	MTN	Mobile Money	2009
Cote d'Ivoire	Orange (Cote d'Ivoire Telecom)	Orange Money	2009
Djibouti	Mobicash	Mobicash	2010
Egypt	Masary	Masary	2010
Ghana	MTN	Mobile Money	2009
Ghana	Airtel (Bharti Airtel)	Zap	2010
Ghana	Txtnpay	TXTNPAY	2009
Ghana	Tigo (Millicom)	Tigo Pesa	2010
Kenya	yu (Essar Telecom)	yucash	
Kenya	Orange (Telkom Kenya)	Iko Pesa	2010
Kenya	Airtel (Bharti Airtel)	Zap	2009
Kenya	Safaricom	M-PESA	2007
Madagascar	Telma	mVola	2010
Madagascar	Airtel (Bharti Airtel)	Zap	2010
Madagascar	Orange	Orange Money	2010
Malawi	Airtel (Bharti Airtel)	Zap	2010
Mali	Orange	Orange Money	2010
Morocco	Maroc Telecom (Vivendi)	MobiCash	2010
Namibia	leo (Orascom)	Leo Cash	2011
Niger	Airtel (Bharti Airtel)	Zap	2010
Niger	Orange	Orange Money	2010
Nigeria	MoneyBox	MoneyBox	2009
Nigeria	Monitise	Unknown	2011
Nigeria	Pagatech	Pagatech	2011
Rwanda	MTN	Mobile Money	2009
Senegal	Orange (Sonatel)	Orange Money	2010
Sierra Leone	Airtel (Bharti Airtel)	Zap	2010
Sierra Leone	Splash Cash	Splash Cash	2009
Somalia	Hormuud Telecom	Zaad	2010
Somalia	Somtel, Somaliland	Zaad	2010
South Africa	MTN	Mobile Money	
South Africa	Vodacom	M-PESA	2010
South Africa	MoPay	MoPay	2009
South Africa	WIZZIT	WIZZIT	2004
South Africa	Standard Bank	Community Banking	2009
Swaziland	MTN	Mobile Money	2011
Tanzania	Airtel (Bharti Airtel)	Zap	2009
Tanzania	Vodacom	M-PESA	2008
Tanzania	Tigo (Millicom)	Tigo Pesa	2010
Tanzania	Zantel (Etisalat)	Zpesa	2008
Uganda	Airtel (Bharti Airtel)	Zap	2009
Uganda	MTN	Mobile Money	2009
Uganda	UT Mobile (Uganda Telecom)	M-Sente	2010
Zambia	Airtel (Bharti Airtel)	Zap	2010
Zambia	Mobile Transactions	Mobile Transactions	2009
Zambia	Celpay	Celpay	2001
Zambia	Zanaco	Xapit	
Zimbabwe	NetOne	One Wallet	2011
Zimbabwe	Telecel (Orascom)	Leo Cash	2011

## Appendix 3 – Regulations Pertinent to ICT Related to Financial Inclusion and Clearing and Settlement Systems

Regulations Most Pertinent to ICT and Financial Inclusion

Country	Electronic Banking and Payment Regulations and Guidelines Information Source (provide website address)	Document Title	Permits Banks to have 3rd party agents?	Permits 3rd Parties, including MNO, to operate Payments?	P2P allowed?	Identification Requirements? (e.g. paper signature, finger print, photo, national ID card?)	Proportional Service and Authentication allowances?
Algeria	Algeria has a real-time settlement and automated clearance.	<a href="#">Money and Credit Ordinance No.03-11, 2003</a>	Yes, branchless banking allowed (see CGAP report: <a href="http://www.cgap.org/p/site/c/template.rc/1.11.142568/">http://www.cgap.org/p/site/c/template.rc/1.11.142568/</a> ).	The Egypt-based mobile operator Orascom initiated an application for mobile transfer services. Status not known partly because of fallout with the government.	A possibility once mobile money products are made widely available in the markets.	Official Photo ID, proof of address	None indicated.
Angola	Angola implemented Values Clearance Service (SCV), the Settlement for Major Payments System (for bank securities in international market and counter-value in domestic currency). Sub-systems: SPTR, MULTICAIXA, and Clearing Value System. The regulatory framework that pertains to electronic systems is Law No. 5/05, <a href="#">The Angolan Payment System Law</a> .	<a href="#">Law No.5/o5</a>	No official guidelines published to date.	No official guidelines punished.	Mobile banking has not become fully functional in Angola.	National ID card	Not specified.
Benin	Member of Banque Central des Etats de L'Afrique De L'ouest (BCEAO)'s SICA-UEMOA clearing system and West African Economic and Monetary Union (WAEMU), WAEMU's automated transfer and settlement system (STAR-UEMOA). Also has interbank card-based payment system. Operationalized in 2006. ( <a href="http://www.bceao.int/internet/bcweb.nsf/files/rapportannuelang2007.pdf/\$FILE/rapportannuelang2007.pdf">http://www.bceao.int/internet/bcweb.nsf/files/rapportannuelang2007.pdf/\$FILE/rapportannuelang2007.pdf</a> )	<a href="#">THE NEW PAYMENT SYSTEMS IN THE WEST AFRICAN ECONOMIC AND MONETARY UNION (WAEMU)</a>	Yes, same as BCEAO countries.	Yes. MTN and Ecobank launched a mobile money transfer service.	Yes, p2p available through the MTN service.	National ID, Driver's License, Passport, Student ID, Proof of Residence (from Ecobank Benin)	None indicated. Possibly tolerated for cash-in.
Botswana	The Botswana Interbank Settlement System (BISS), is a system that allows funds to be transferred between participating institutions on an irrevocable and real time basis. It is also commonly known as the Real Time Gross Settlement (RTGS) system. ( <a href="http://www.bankofbotswana.bw/index.php/content/2009103012044-botswana-interbank-settlement-system">http://www.bankofbotswana.bw/index.php/content/2009103012044-botswana-interbank-settlement-system</a> ). <b>Note:</b> the regulation that applies to electronic payments including mobile money is the <a href="#">National Clearance and Settlements System Regulation of 2005</a> . Also see: National Payments System Oversight Policy ( <a href="http://www.bankofbotswana.bw/assets/uploaded/Oversight%20framework%20%20April%2024,%202008.pdf">http://www.bankofbotswana.bw/assets/uploaded/Oversight%20framework%20%20April%2024,%202008.pdf</a> ) ( <a href="http://www.bis.org/cps/paysys/Botswana.pdf">http://www.bis.org/cps/paysys/Botswana.pdf</a> )	<a href="#">THE NATIONAL CLEARANCE AND SETTLEMENT SYSTEMS REGULATION, 2005.</a>	Yes, the regulations provide for third-party participation but with the sponsorship of financial institutions to manage risk exposure. Ex. Post Office, credit card companies.	A 3rd party that operates payment is Western Union	Mobile banking is offered by FNB Botswana bank that has p2p capability.	Driver's license, ID card or passport	No specific waivers for small value transactions.
Burkina Faso	Member of BCEAO's SICA-UEMOA clearing system and WAEMU's automated transfer and settlement system (STAR-UEMOA). Also has interbank card-based payment system.	<a href="#">THE NEW PAYMENT SYSTEMS IN THE WEST AFRICAN ECONOMIC AND MONETARY UNION (WAEMU)</a>	Yes, within the BCEAO framework. Also, Post Office and credit card companies.	Yes. Western Union and Bank of Africa offer mobile money transfer services	No record of availability of mobile money services ; low electronic retail payments	National ID, Driver's License, Passport, Student ID, Proof of Residence (from Ecobank Burkina Faso)	None specified
Burundi							
Cameroon	Member of the regional central bank BEAC and adheres to regional regulations. Système de Gros Montants Automatisé (SGMA) for wholesale settlements, Système de Telecompensation en Afrique Central (SYSTAC) for retail payments are already functional.	<a href="#">STATUTS DE LA BANQUE DES ETATS DE L'AFRIQUE CENTRALE</a>	Yes. On a case-by-case basis but in partnership with banks	MNO MTN operates in collaboration with Afriland First Bank to offer mobile banking services.	Yes, MTN Mobile Money provides P2P services.	National ID card for Cameroonians and passport for foreigners	None specified but possibly cash-in tolerated.

Cape Verde	Cape Verde has the Integrated Interbank Clearing and Settlement (Sicily) that performs Interbank clearance and payments. The <u>regulation is from 2001 providing for all kinds of transaction; not updated.</u> Note: They have good consumer protection.	No recent publication specific to electronic payments.	Yes, but they are no allowed to take deposits. Ex. Post offices	Western Union operates.		National ID, Driver's License, Passport , Student ID, Proof of Residence, proof of earning (from Ecobank)	No data available
Central African Republic	Member of the regional central bank BEAC and adheres to regional regulations. Système de Gros Montants Automatisé (SGMA) for wholesale settlements, Système de Telecompensation en Afrique Central (SYSTAC) for retail payments are already functional.	<a href="#">STATUTS DE LA BANQUE DES ETATS DE L'AFRIQUE CENTRALE</a>	Yes, case-by-case within the BEAC framework. SOPECO, the postal service operator offers savings services	Case-by-case within the BEAC framework.	There are discussions underway to start mobile money services that may include p2p.	National ID, Driver's License, Passport , Student ID, Proof of Residence, proof of earning (from Ecobank).	None specified
Chad	Member of the regional central bank BEAC and adheres to regional regulations. Système de Gros Montants Automatisé (SGMA) for wholesale settlements, Système de Telecompensation en Afrique Central (SYSTAC) for retail payments are already functional.	<a href="#">STATUTS DE LA BANQUE DES ETATS DE L'AFRIQUE CENTRALE</a>	Case-by-case within the BEAC framework.	Case-by-case within the BEAC framework.	No record of availability if mobile money services ; low electronic retail payments	National ID, Driver's License, Passport , Student ID, Proof of Residence, proof of earning (Ecobank Chad).	None specified
Comoros	Insufficient data.						
Congo	Member of the regional central bank BEAC and adheres to regional regulations. Système de Gros Montants Automatisé (SGMA) for wholesale settlements, Système de Telecompensation en Afrique Central (SYSTAC) for retail payments are already functional.	<a href="#">STATUTS DE LA BANQUE DES ETATS DE L'AFRIQUE CENTRALE</a>	Case-by-case within the BEAC framework.	Case-by-case within the BEAC framework.	Bank of Congo plans to start a mobile banking service that may include p2p (see: <a href="http://www.mfw4a.org/news/news-details/7/central-bank-of-congo-is-to-launch-mobile-banking-services.html">http://www.mfw4a.org/news/news-details/7/central-bank-of-congo-is-to-launch-mobile-banking-services.html</a> )	BEAC KYC/AML requirements: Copy of Photo ID, Proof of Address. Additional: Pay stub, work certificate	None specified
Congo, Democratic Republic of	A national payment system project underway; regulatory frameworks related to electronic payment systems currently unavailable. There is one clearing house in Kinshasa that is paper-based.	<a href="#">REGLEMENT DE LA CHAMBRE DE COMPENSATION</a>	Yes, the Postal and Telecommunication s Office (OCPT) performs financial services through post offices.	No publication available.	No record of availability of mobile money services ; low electronic retail payments	National ID, Driver's License, Passport , Student ID, Proof of Residence (from Ecobank DR Congo)	None specified.
Cote d'Ivoire	Regional Central Bank regulations (for Francophone West Africa). Member of BCEAO's SICA-UEMOA clearing system (operationalized in 2006) and WAEMU's automated transfer and settlement system (STAR-UEMOA). Also has interbank card-based payment system. ( <a href="http://www.bceao.int/interne t/bcweb.nsf/files/rapportannuelang2007.pdf/\$FILE/rapportannuelang2007.pdf">http://www.bceao.int/interne t/bcweb.nsf/files/rapportannuelang2007.pdf/\$FILE/rapportannuelang2007.pdf</a> )	<a href="#">THE NEW PAYMENT SYSTEMS IN THE WEST AFRICAN ECONOMIC AND MONETARY UNION (WAEMU)</a>	Yes, BCEAO has favorable regulations.	Orange operates <i>Orange Money</i> in partnership with BNP bank.	Yes, ex <i>Orange Money</i> mobile money transfers since 2008	ID card, proof of name and address	No specific waiver but possible tolerance for cash-in.
Djibouti	Data not sufficient/unavailable. Note: Djibouti is a very small nation with the majority of the population living in the capital city. Foreign banks such as Ethiopia's commercial bank operate in the country. Extremely limited electronic transactions.						
Egypt	A Real time gross settlement system can thus be characterized as a funds transfer system that is able to provide continuous intraday finality for individual transfers. ( <a href="http://www.cbe.org.eg/rtgs_p.htm">http://www.cbe.org.eg/rtgs_p.htm</a> )	<a href="#">THE EGYPTIAN REAL TIME GROSS SETTLEMENT SYSTEM</a>	Yes, Mobile network providers	Yes, they can perform the same functions as Banks, CBE	Yes, Customer to customer transactions are permitted	Passport or National ID, 2 photos and proof of address	None indicated. Possibly tolerated for cash-in.
Equatorial Guinea	Member of the regional central bank for Francophone West African countries, BEAC and follows the bank's regulations. Système de Gros Montants Automatisé (SGMA) for wholesale settlements, Système de Telecompensation en Afrique Central (SYSTAC) for retail payments are already functional.	<a href="#">STATUTS DE LA BANQUE DES ETATS DE L'AFRIQUE CENTRALE</a>	Case-by-case within the BEAC framework.	Case-by-case within the BEAC framework.	Mobile money services not available.	BEAC KYC/AML requirement: Copy Photo ID, Proof of Address. Additional: Pay stub, work certificate	Not indicated
Eritrea	Data not sufficient/unavailable. Note: as a young nation that dates back to 1993 as it separated from Ethiopia, the financial institutions in the country are limited in capability. All establishments are state-owned and are NOT open to foreigners. Extremely						

	limited electronic transactions.						
Ethiopia	Regulatory frameworks are underway for electronic payments. An RTGS system and Electronic Clearing House are getting finalized for roll out (presented to Parliament for approval). Non cash payment besides cheque are not common in Ethiopia except at big hotels or airports and the payment systems in existence are under review for upgrades to electronic payment systems. The National payment system modernization project has outlined various plans and strategies to enlarge electronic networks of commercial banks and their interoperability.	<a href="#">MODERNAIZATION OF THE NATIONAL PAYMENT SYSTEM IN ETHIOPIA</a>	Western Union transfer services	Ethiopia does NOT allow non-Ethiopian institutions to operate financial institutions. Major local banks plan to implement m-banking ( <a href="http://pdf.usaid.gov/pdf_docs/PNADM002.pdf">http://pdf.usaid.gov/pdf_docs/PNADM002.pdf</a> )	Fettan is the first mobile electronic payment enabling p2p payments and money transfers in Ethiopia ( <a href="http://www.tvc.com/news/news-story/fettan-electronic-payment-system-adopts-cr2s-bankworld-suite-in-ethiopia">http://www.tvc.com/news/news-story/fettan-electronic-payment-system-adopts-cr2s-bankworld-suite-in-ethiopia</a> )	<i>Kebele</i> (neighborhood association) ID card. Ethiopians in Diaspora Account: passport number, name, address. ( <a href="http://www.combanketh.com/publication/Diaspora%20Account%20Opening%20Application%20Form.pdf">http://www.combanketh.com/publication/Diaspora%20Account%20Opening%20Application%20Form.pdf</a> )	No waivers for small value transactions.
Gabon	Regional Central Bank, BEAC, regulations (for Francophone Central Africa). The real-time gross settlement Système de Gros Montants Automatisé (SGMA) for large-value settlements, Système de Telecompensation en Afrique Central (SYSTAC) for retail payments are already functional.	<a href="#">STATUTS DE LA BANQUE DES ETATS DE L'AFRIQUE CENTRALE</a>	Case-by-case within the BEAC framework. Yes for Gabon Post, the postal service operator offers savings services. Currently the service is facing problems and is undergoing overhauls	Case-by-case within the BEAC framework.	Mobile money services not available.	BEAC KYC/AML requirement: Copy Photo ID, Proof of Address. Additional: Pay stub, work certificate	No waivers for small value transactions per BEAC KYC/AML requirements.
Gambia	The West African Monetary Zone (WAMZ) member; regional RTGS project underway. Plans to introduce Automatic Clearing House	No publication to date.	Yes. Ex. The Social Security and Housing Finance Corporation (SSHFC)	There are multinational banks in Gambia that offer some online and mobile banking services.	Efforts underway to start mobile banking that includes p2p capability in collaboration with telcos: Ex. GTBank's <i>Orange Savings</i> .	A cumbersome process. Required documents to open a bank account: 1) Application to open account 2) Signature cards (2 copies) 3) Letter from employer (for salary accounts) 4) National ID Card/Driver's License (or letter of attestation from Civic Registration Dept of Gambia), 5) International Passport (for foreigners) 6) Proof of address - Public Utility Receipt, Tax Receipt 7) Two referees 8) KYC Forms. For details see: <a href="http://www.zenithbank.gm/accountopening.cfm">http://www.zenithbank.gm/accountopening.cfm</a>	No waivers for small value transactions.
Ghana	The current trend in Ghana's payment systems development is being driven by economic, financial, public policy factors as well as a growing local ICT industry and global trends in payment systems development. A range of cashless and safe payment instruments available, although checks are the major inter-bank retail payment instrument which constitutes about 95% of the total retail payments both in terms of volume and value. The remaining 5% is contributed by the inter-bank credit transfer. <u>The Bank of Ghana Act 2002 Act 612</u> makes the bank the authority responsible for payment and settlement systems in Ghana. ( <a href="http://www.bog.gov.gh/privatecontent/File/IDPS/Act%20662.pdf">http://www.bog.gov.gh/privatecontent/File/IDPS/Act%20662.pdf</a> )	<a href="#">GUIDELINES FOR BRANCHLESS BANKING</a>	Yes, agents like Telcos, gas distribution companies, merchants, post offices, etc. Technologies not limited to mobile phones (like GPRS, POS terminals etc.)	Yes, all payment must be compliant with the Ghana Interbank Payment and Settlement System (GhIPSS). Agents may perform any or all of the following functions depending on the agency agreement and agent type: Opening of BB Accounts, Cash in/Cash out, Bills Payments (both from registered BB customers as well as walk-in customers of any utility company, Funds transfers, Loan disbursement and repayment (without involving loan marketing/ approval functions)	Yes, Person-to-person Fund Transfers; Customer can transfer funds from their account to BB or regular accounts of other customers of same or some other bank (depending on the model capabilities)	Photo ID (Voters ID card, Driver's License or Passport). ( <a href="http://www.bog.gov.gh/privatecontent/File/MPAFSD/FAQs%20zwischen%20Personal%20clients_.pdf">http://www.bog.gov.gh/privatecontent/File/MPAFSD/FAQs%20zwischen%20Personal%20clients_.pdf</a> )	None indicated

Guinea	The West African Monetary Zone (WAMZ) member; regional RTGS project underway.	No publication available.	Western union transfer services	Multinational banks operate	No record of availability if mobile money services ; low electronic retail payments	National ID, Driver's License, Passport , Student ID, Proof of Residence (from Ecobank )	None specified
Guinea-Bissau	Member of regional central bank for central African francophone countries, the BCEAO's SICA-UEMOA clearing (operationalized in 2007) system and WAEMU's automated transfer and settlement system (STAR-UEMOA). Also has interbank card-based payment system	<a href="#">Banque Central des Etats de L'Afrique De L'ouest: 2007 Annual Report</a>	Yes, BCEAO has favorable regulations.	Multinationals operate	Possible with MTN's plan to roll out mobile money	National ID, Driver's License, Passport , Student ID, Proof of Residence (from Ecobank )	None specified
Kenya	The country has a very favorable and exemplary regulatory environment that allowed the existence of M-PESA. Kenya Electronic Payments and Settlement System (KEPSS), the country's Real Time Gross Settlement (RTGS) System became operational July 2005. ( <a href="http://www.centralbank.go.ke/nps/National%20Payment%20System/Clearinghouse.aspx">http://www.centralbank.go.ke/nps/National%20Payment%20System/Clearinghouse.aspx</a> ). Also: <a href="http://www.centralbank.go.ke/downloads/nps/Publications/Development%20and%20Regulation%20in%20PS%20in%20Kenya.pdf">http://www.centralbank.go.ke/downloads/nps/Publications/Development%20and%20Regulation%20in%20PS%20in%20Kenya.pdf</a>	<a href="#">PAYMENT SYSTEM IN KENYA</a>	Yes, Mobile network providers, post office savings bank, non-bank financial institutions, mortgage financial institutions and building societies. Central Bank amended the banking Act through the Finance Act of 2009 to enable banks to use 3rd party agents. Institutions intending to enroll in agent banking must apply to the Central Bank for agent network approval.	Yes, some of the major mobile money transfers include M-PESA by Safaricom, Airtel Money, yuCash, Orange Money, and Tangaza (these are considered non-bank money issuers)	Yes, Person-to-person Fund Transfers available through M-PESA (operated by Safaricom and Equity Bank) <a href="http://financialaccess.org/node/2968">http://financialaccess.org/node/2968</a>	Copy of either Kenyan Identification card/passport, a passport size photo, either a copy of a utility bill, a bank statement, or an address confirmation, and account application form	None indicated. Possibly tolerated for cash-in.
Lesotho	Lesotho has an RTGS system known as LesothoWire that is operational. Lesotho is also in the process of modernising its payment and settlement system, and the establishment of an Automated Clearing House (ACH) has been identified as one of the main strategies for payment system reform. ( <a href="http://www.centralbank.org.ls/projects/default.htm">http://www.centralbank.org.ls/projects/default.htm</a> )	<a href="#">PAYMENT SYSTEM IN LESOTHO</a>	Other institutions providing payment systems are the post office and development banks	Yes the post office can also operate payments in the form of credit transfers	No, only bank to bank interactions are allowed by regulation. <b>Note:</b> Branchless banking enabled according to CGAP.	Cumbersome: Passport, letter from employer, proof of address, pay slip	None indicated
Liberia	The Country is undertaking the West African Monetary Zone (WAMZ) payment systems project. The Central Bank of Liberia instituted a twice daily automated clearing and settlement system in 2001. It presently operates on the basis of "a one daily clearing and settlement method".	No specific publication to date.	MoneyGram and Western Union Operate	Multinational banks operate	No p2p yet. <b>Note:</b> SMS and Internet banking available.	Photocopy of ID card or passport; two passport size photos required	None indicated
Libya	The interbank payments systems provide enhanced risk management for national payment systems.	Guidelines for Electronic Banking	Current status unknown (because of civil war)	Willingness to experiment. <i>More Magic</i> and Nokia Siemens Networks piloted a mobile money transfer in 2011. Status unknown because of civil war.	Current status unknown because of civil war	passport or ID card	None indicated
Madagascar	There are some beginnings mobile money operations despite absence of regulatory framework. SYRCOD, a settlement system based on decentralized clearing was established in 2007 with intentions of setting up ACH and RTGS.	<a href="#">Progress Made on Madagascar Payment and Settlement System</a>	Case-by-case	<i>Bharti-Airtel, Orange Money, M-Vola</i>	Yes, the available mobile money services have p2p capability	National ID card or official document with photo	None indicated
Malawi	No formal regulations but permissive. The financial system is relatively undeveloped and is largely dominated by cash in payment processes. In an effort to reduce reliance on cash settlements, Malawi has recently implemented Malawi Inter-Bank Transfer and Settlement System (MITASS), Electronic Cheque Clearing House (EECH) among others. 3 commercial banks issue Visa debit cards to their clients. The securities system however is yet to be automated.	<a href="#">Malawi National Payment System Vision and Strategy Framework for the period 2009 to 2013</a>	Case-by-case	Yes, Zain launched Zap. Also, the post office in the form of postal and money orders	Zain's Zap has p2p capability. Some banks like OIMB also offer mobile banking with p2p features.	National ID card or passport; proof of address	None indicated

Mali	Regulated by regional central bank for francophone west Africa, BCEAO, which is permissive and favorable to electronic value creation. The payment system in Mali is characterized by the predominance of cash payments and high cost transactions. Mali is also a member of the West African Economic and Monetary Union (WAEMU). The regional automated transfer and settlement system (STAR-UEMOA) was established in 2004 and is designed for large value interbank transfer. Regional interbank processing for card based payment system (GIM-UEMOA). WAEMU's payment system reform aims to minimize cash payments by providing proper payment infrastructure with the establishment of an automated transfer and settlement system and real time gross settlement system.	<a href="#">The New Payment Systems in the (WAEMU)</a>	Yes, BCEAO has favorable regulations.	Yes, MNO's operate	Yes, p2p available with the launch of <i>Orange Money</i>	National ID, Driver's License, Passport, Student ID, Proof of Residence (from Ecobank)	None specified but cash-in possibly tolerated.
Mauritania	Characterized by predominant cash transaction a high volume of domestic float. Attempted integration with North African countries delayed. Note: there is a regulation for electronic payments, however. (See: <a href="http://www.bcm.mr/R/C3%A9glementation/Lois%20et%20Ordonnances/Documents/Ordonnance%202006-031%20relative%20aux%20instruments%20de%20paiement%20et%20operatoires%20du%20Commerce%20electronique.s.pdf">http://www.bcm.mr/R/C3%A9glementation/Lois%20et%20Ordonnances/Documents/Ordonnance%202006-031%20relative%20aux%20instruments%20de%20paiement%20et%20operatoires%20du%20Commerce%20electronique.s.pdf</a> ).		No. Banks are NOT allowed to have subsidiaries.	The Mauritania-Tunisienne de Télécommunications (MATTEL) has partnered with Ottawa-based Telepin to offer mobile payment solutions.	P2P a possibility when MATTEL fully implements its mobile money services. See: <a href="http://www.obj.ca/Technology/2010-05-11/article-1076316/Telepin-banks-deal-with-Mauritanian-mobile-network-operator/1">http://www.obj.ca/Technology/2010-05-11/article-1076316/Telepin-banks-deal-with-Mauritanian-mobile-network-operator/1</a>	<a href="#">National ID with photo (to be photocopied), proof of address.</a>	None indicated.
Mauritius	Has guidelines for online banking. Mauritius Automated Clearing and Settlement System together with the commercial banks embarked on a cheque truncation and electronic archiving. The bank of Mauritius provides a regulatory framework for all internet banking services in Mauritius.	<a href="#">GUIDELINES ON INTERNET BANKING</a>	Yes, Moneygram Money transfer with transaction limits of (USD 2,500 per day) <a href="http://www.maybank2u.com.my/mbb_info/m2u/public/personalDetail04.do?channelId=ACC-C-Accounts&amp;cntTypeId=0&amp;programId=ACC04-FundsTransfers&amp;cntKey=ACC04.07&amp;channelId=/mbb/Personal/ACC-Accounts">http://www.maybank2u.com.my/mbb_info/m2u/public/personalDetail04.do?channelId=ACC-C-Accounts&amp;cntTypeId=0&amp;programId=ACC04-FundsTransfers&amp;cntKey=ACC04.07&amp;channelId=/mbb/Personal/ACC-Accounts</a>	Yes. Ex. MoneyGram	No record of availability if mobile money services ; low electronic retail payments	Copy of passport, proof of address (3 months), utility bill ( <a href="http://www.mcb.mu/">http://www.mcb.mu/</a> )	None specified.
Morocco	A National Payment Council has been created to draft regulations relating to payment systems. The Moroccan Interbank Clearing and Settlement System (SINT), Gross Settlement System of Morocco (SRBM), Card Payment Center (CMI), and the Central Depository (MAROCLEAR), are fully functional, although some manual clearing is still prevalent according the Central Bank's website.	<a href="#">No Specific publication to date; Case-by-case</a>	Case-by-case. Maroc Telecom offers <i>Mobicash</i> service in partnership with banks.	Yes. Ex. <i>Mobicash</i> .	Yes, p2p can be performed on <i>Mobicash</i>	Photo ID, notarized proof of residence	No specific waivers for small value transactions.
Mozambique	Mozambique has a fairly developed clearing and settlement system, although not up to par with RTGS systems. Recent regulations provide for Interbank Clearance and Settlement systems (Interbank Clearance and Settlement Systems Notice of 2005)	<a href="#">NOTICE 9/GGBM9/2005</a>	Yes, by law, third parties can perform financial transactions on behalf of banks and serve as deposit brokers. No regulations published to date.	Yes, by law.	<a href="#">Mkesh launched by state-owned Mcel</a>	A variety of documents with photo allowed	Occasional, low-value transactions can be performed without ID to receive and send money domestically
Namibia	The Namibia Inter-Bank Settlement System (NISS) offers real-time services for checks and electronic transfers. The Payment Association of Namibia is mandated by regulation to manage the National Payment and Clearing Systems.	<a href="#">PAYMENT SYSTEM MANAGEMENT ACT, 2003</a>	Case-by-case (not regulated). <i>Mobicash</i> has been granted a license. NamPost performs financial services through post offices.	<a href="#">The Bank of Namibia has announced that a certificate of authorization to provide mobile payment services in Namibia has been granted to MOBICASH PAYMENT SOLUTIONS (PTY) LIMITED with effect from 24 August 2010.</a>	Yes, p2p with South-Africa-based <i>Mobicash</i> .	Namibian ID, Driver's License, or passport	None indicated.

Niger	Member of regional central bank for francophone west Africa and adheres to its regulations. Participant in BCEAO's SICA-UEMOA clearing system and WAEMU's automated transfer and settlement system (STAR-UEMOA).	<a href="#">THE NEW PAYMENT SYSTEMS IN THE WEST AFRICAN ECONOMIC AND MONETARY UNION (WAEMU)</a>	Yes, as member of BCEAO and its favorable framework. ONPE, the postal service operator offers savings services; restructuring underway.	Yes. Ex. Zain launched Zap.	Zain's Zap has p2p capability.	National ID, Driver's License, Passport , Student ID, Proof of Residence (from Ecobank)	None specified
Nigeria	The Central Bank of Nigeria produced a document that details out mobile payments, the institutions that can offer them, and clearing and settlement procedures. Nigeria's Interbank Settlement System, PLC operates an automated clearing technology and facilitates paper-less interbank clearing and settlement processes. Automated clearing operations are conducted on a daily basis. Nigeria recently went to the extent of limiting cash use by setting a penalty for withdrawals in excess of N150,000 ( <a href="http://234next.com/csp/cms/sites/Next/Money/Finance/5695176-183/central_bank_sets_new_cash_withdrawal.csp">http://234next.com/csp/cms/sites/Next/Money/Finance/5695176-183/central_bank_sets_new_cash_withdrawal.csp</a> ).	<a href="#">REGULATORY FRAMEWORK FOR MOBILE PAYMENTS SERVICES IN NIGERIA</a>	Yes, according to the REGULATION cited here.	In 2010, CBN unveiled the regulatory framework for provision of mobile money services licensed 16 firms to render mobile money services ( <a href="http://mobilemonyafrica.com/?p=1737">http://mobilemonyafrica.com/?p=1737</a> ) <a href="http://www.cenbank.org/OUT/CIRCULARS/TED/.../P2P%20PAYMENTS.PDF">www.cenbank.org/OUT/CIRCULARS/TED/.../P2P%20PAYMENTS.PDF</a>	Yes. However, most of the p2p trade is primarily cash settlement. Current initiatives (Financial System strategy 2020) to increase secure electronic payments without the need for extensive infrastructure.	ID card or passport. Note: If foreigner, business permit, expatriate quota, combined expatriate residence permit and alien card. Others: registration of securities, registration with the dept of petroleum services, registration with National Office of Technology Acquisition and Promotion( <a href="http://www.ngex.com/reports/business_in_nigeria.pdf">http://www.ngex.com/reports/business_in_nigeria.pdf</a> )	None indicated.
Rwanda	The RWANDA INTEGRATED PAYMENT PROCESSING SYSTEM (RIPPS) is under development as of April 2011, according to the Central Bank of Rwanda. When completed it will include an Automated Clearing House, a Real Time Goss Settlement System (RTGS), and a Central Securities Depository (CDS). A national Switch, SIMTEL, was operationalized in 2005 enabling interoperability together with semi-automated clearing with a T+1 capability. A Payment System regulation was published in 2010 that outlines clearing and settlement provisions including electronic ones.	<a href="#">LAW No.03/2010 of 26/02/2010 CONCERNING PAYMENT SYSTEM</a>	Yes, National Post Office (but does not participate in the Clearing House; limited to checks that are cashed at post offices only)	MNO's like MTN operate in collaboration with banks to offer mobile banking services.	P2p provided by MTN	National ID card or passport	No specific waiver of ID or authentication requirements based on proportion of money transferred.
Senegal	Member of regional central bank for francophone African West Africa, BCEAO, and adheres to its regulations. BCEAO's SICA-UEMOA clearing system and WAEMU's automated transfer and settlement system (STAR-UEMOA). Also has interbank card-based payment system. Operationalized in 2006. ( <a href="http://www.bceao.int/internet/bcweb.nsf/files/rapportannuelang2007.pdf/SFILE/rapportannuelang2007.pdf">http://www.bceao.int/internet/bcweb.nsf/files/rapportannuelang2007.pdf/SFILE/rapportannuelang2007.pdf</a> )	<a href="#">THE NEW PAYMENT SYSTEMS IN THE WEST AFRICAN ECONOMIC AND MONETARY UNION (WAEMU)</a>	Yes, BCEAO has favorable regulations.	Yes, MNOs like Orange Operate	Orange Money has p2p capability.	National ID, Driver's License, Passport , Student ID, Proof of Residence (from Ecobank )	Not specified but possibly tolerated for cash-in.
Seychelles							
Sierra Leone	The West African Monetary Zone (WAMZ) member; regional RTGS project underway. Although not detailed as to cover mobile money, the regulations of the Central Bank of Sierra Leone provide for electronic payments.	<a href="#">THE PAYMENT SYSTEMS ACT, 2009</a>	Case-by-case	Yes. Zain launched Zap in 2010. (For more details see CGAP report: <a href="http://www.cgap.org/p/site/c/template.rc/1.11.142568/">http://www.cgap.org/p/site/c/template.rc/1.11.142568/</a> )	Zain's Zap has p2p capability.	National ID, Driver's License, Passport , or other official document with photo	Revising KYC requirements (see CGAP report).
Somalia	Despite the absence of a central government and central monetary body, there is a booming informal/semi-formal money transfer industry in the country that channels remittances from the rather significant Somali diaspora. There is even a mobile banking, SAAD, service offered by the country's largest mobile operator Hormuud Telecom.	Outdated publication.	Informal	No. All operations are conducted by Somalis.	Yes, Hormuud Telecom's SADD money.	Flexible	Flexible
South Africa	South Africa has one of the most well-developed and robust electronic systems that are comparable to those in Europe and the United States. All kinds of electronic payments are available together a real time capacity. The regulatory framework is dynamic and favorable as long as payments are channeled through banks.	<a href="#">THE NATIONAL PAYMENT SYSTEM ACT</a>	Yes	Yes, mobile phone transactions were created via MTN bank and WIZZIT to provide financial services to low-income clients. However, only banks are permitted to issue	Yes	Green ID book or driver's license, proof of residence, if underage < than 18, birth certificate or Green ID book	None indicated.

				electronic money. Other banks have launched mini-ATMs in areas without a branch. Bank account applications are fully integrated within the mobile banking options. Some features of mobile banking include transferring money to 3rd party accounts, checking balances, and loading e-accounts with credits. Shoprite, a food retailer, offers money transfer services. (http://www.cgap.org/gm/document-1.9.42404/Updated_Notes_On_Regulating_Branchless_Banking_South_Africa.pdf)			
Sudan	Sudan has a well-developed electronic transactions regulation. The RTGS project and its integration within regional (COMESA) and the Arab network (API) have been going on for years. A combination of Electronic and manual clearing are in effect in addition to a national switch system.	<a href="#">THE ELECTRONIC TRANSACTIONS ACT, 2007</a>	Ex. <i>Saraf-Mobile</i>	Yes, <i>Saraf-Mobile</i> was launched by UK's Mi-Pay and Kuwaiti Isys	Yes, <i>Saraf-Mobile</i> offers p2p. See: <a href="http://www.finextira.com/news/fullstory.aspx?newsitemid=19718">http://www.finextira.com/news/fullstory.aspx?newsitemid=19718</a>	National ID card, Driver's License; passport for foreigners	No specific waiver of ID or authentication requirements based on proportion of money transferred.
Swaziland	The country has a fairly development electronic payment system and currently projects are underway to improve existing national payment system. However, specific regulation to electronic payments and agent banking are yet to be developed. Although fragmentary, the regulation that is most relevant is the <a href="#">Minimum Standards for Electronic Payment Schemes</a>	<a href="#">MINIMUM STANDARDS FOR ELECTRONIC PAYMENT SCHEMES</a>	Case-by-case. <i>Mobile Money</i> offered by MTN agents; can also be linked to a bank account.	Ex. MTN's <i>Mobile Money</i>	Yes, p2p available	MTN SIM and National ID or passport. According to one report, however, no KYC required; MTN cellphone number sufficient. See: <a href="http://mobilemoneyafrica.com/?p=3487">http://mobilemoneyafrica.com/?p=3487</a>	Possible. KYC Requirements are being revised according to CGAP ( <a href="http://www.cgap.org/p/site/c/temp_late.rc/1.11.142568/">http://www.cgap.org/p/site/c/temp_late.rc/1.11.142568/</a> ).Also according to one report, no KYC required and MTN cellphone number sufficient. See: <a href="http://mobilemonyafrica.com/?p=3487">http://mobilemonyafrica.com/?p=3487</a>
Tanzania	The interbank clearing system is processed electronically at the Dar es Salaam Electronic Clearing House which accounts for 80% of the country's inter-bank clearings while the rest is processed manually. Checks are the most frequently used non cash payment in Tanzania. Telegraphic transfers are the main forms of credit transfers.	<a href="#">Bank of Tanzania- Payment systems in the Southern African Development Community</a>	Yes, advance payment bond ( a guarantee given by a bank to a third party securing advance payment), performance bond offered to a third party	Deposit taking institutions which include micro finance institutions and Tanzania Postal Bank (and post offices)	Yes, p2p available	Passport of ID card, proof of address. Note: Letters from elders can, in some case, be accepted as alternatives	None indicated; possibly tolerated for cash-in.
Togo	Member of a regional central bank, BCEAO, for francophone West Africa and, as such, adheres to the bank's regulations. BCEAO's SICA-UEMOA clearing system and WAEMU's automated transfer and settlement system (STAR-UEMOA). Also has interbank card-based payment system	<a href="#">THE NEW PAYMENT SYSTEMS IN THE WEST AFRICAN ECONOMIC AND MONETARY UNION (WAEMU)</a>	Yes, BCEAO has favorable regulations.	Case-by-case within the BCEAO framework.	Enabling branchless banking (See CGAP report)	National ID, Driver's License, Passport , Student ID, Proof of Residence (from Ecobank )	None Indicated
Tunisia	The regulation that is most relevant to electronic payments is the <a href="#">Law No. 2005-51 of 2005</a> that provides guidelines on electronic transfers. However, the law has not been updated to reflect mobile banking and other new retail electronic payments. Check payments are predominant and electronic payments constitute a small fraction of transactions.	<a href="#">LOI No. 2005-51 DU 27 JUIN 2005, RELATIVE AU TRANSFER ELECTRONIQUE DE FONDS</a>	Case-by-case and in partnership with banks. Ex. <i>Mdinar</i> . Note: see: <a href="http://www.mdinar.com">www.mdinar.com</a> for details	Case-by-case. Tunisiana owned by Qatar-based Qtel operates <i>Mdinar</i>	Yes, includes p2p service.	Tunisian ID card	No specific waivers for small value transactions. Same for bank accounts and mobile banking.
Uganda	Uganda National Interbank Settlement System (UNISS) provides settlement facilities for Uganda shillings payment. In 2002 the banking system developed and adopted electronic funds transfer which is now used by all commercial	<a href="#">National Payment Systems Secretariat</a>	Yes, banks such as Crane bank and standard chartered allow 3rd party money transfers	Yes, there are 5 MNO's in Uganda but only 3 offer m-payments:	Yes, MTN mobile banking provides P2P services.	Driver's license or ID card	None indicated; possibly tolerated for cash-in for mobile banking.

	banks. Non cash payment is reserved for financial institutions. If the payer and payee have accounts in the same bank, the bank settles the money in its own clearing center, however if they both have different banks, the payer's bank uses the inter-bank clearing center for the exchange.						
Zambia	Bank of Zambia introduced the Zambia Inter-bank Payment and Settlement System (ZIPSS) to ensure faster and secure real-time transactions in 2004. The Bank's " <a href="#">Money Transmission Services Guidelines</a> " of 2009 details out the conditions under which banks and non-bank entities may transfer money as provided by the National Payment Systems Act of 2007. The guideline allows designation, i.e., transfers through Bank of Zambia-registered agents.	<a href="#">THE NATIONAL PAYMENT SYSTEMS ACT, 2007</a>	Yes, Zambia allows third-party designation for transfers	Yes, MNOs in Zambia offer fund transfer services	Yes, P2P services are provided by Celplay and Mobile Transactions Zambia Ltd. Also by ZMP Limited and Mobile Payment Solutions.	National Registration Card	No specific waiver of ID or authentication requirements based on proportion of money transferred.
Zimbabwe	The Zimbabwe Electronic Transfer and Settlement System (ZETSS) was launched in 2002. Authorized by the National Payment System (NPS) Bill of 2001, it allows banks and non-bank institutions to effect inter-bank high-value, high-risk settlements. The Reserve Bank introduced same day clearance and settlement in 2004.	<a href="#">National Payment System Bill, 2001</a>	Case-by-case. No specific official guidelines published to date. In practice, Telcos partner with banks with the approval of the central bank; telcos operate through their own agents	Yes, NetOne's <i>OneWallet</i> , TelCel's <i>Skwama</i> mobile banking service	Peer-to-peer offered, although mobile money transfer services are brand new in Zimbabwe as of April 2011.	National Registration Card or utility bills. <b>Alternatives:</b> letters from recognized organizations, affidavits from landlords and homeowner certificates	No specific waiver of ID or authentication requirements based on proportion of money transferred.

## Endnotes

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- 1 “Mobile Value Added Services (MVAS) – A Vehicle to Usher in Inclusive Growth and Bridge the Digital Divide,” Deloitte Touche Tohmatsu Limited, January 2011.
- 2 “Mobile Value Added Services (MVAS) – A Vehicle to Usher in Inclusive Growth and Bridge the Digital Divide,” Deloitte Touche Tohmatsu Limited, January 2011.
- 3 Kendall, J., N. Mylenko and A. Ponce. “Measuring Financial Access around the World,” The World Bank, Finance and Private Sector Development, March 2010.
- 4 Mylenko, N. et. al. “Financial Access 2010: The State of Financial Inclusion through the Crisis,” The World Bank, The Consultative Group to Assist the Poor, September 2010.
- 5 Isern, J., et. al. “Access to Finance in Nigeria: Microfinance, Branchless Banking, and SME Finance,” The World Bank, The Consultative Group to Assist the Poor, January 2009.
- 6 Alliance for Financial Inclusion (AFI), “The AFI Survey on Financial Inclusion Policy in Developing Countries: Preliminary Findings,” April 2010.
- 7 International Finance Corporation, “Secured Transaction Systems and Collateral Registries,” January, 2010.
- 8 “The Establishment of the Collateral Registry Earns Ghana the Position of the Top Global Reformer in Improving Access to Credit,” <http://www.bog.gov.gh/index1.php?linkid=314&archiveid=1797&page=1&adate=09%2F11%2F2010>, as validated May 4, 2011.
- 9 Minoiu, C. and J. Reyes, “A Network Analysis of Global Banking: 1978-2009,” IMF Working Paper, IMF Institute, April 2011.
- 10 Dutta, S. and I. Mia, editors. “The Global Information Technology Report 2010-2011,” World Economic Forum and INSEAD, 2011.
- 11 International Finance Corporation, “Financial Infrastructure: Building Access through Transparent and Stable Financial Systems,” IBRD, 2009.
- 12 Lyon, B. “The Microfinance Revolution,” blog post for Nuru International at: <http://www.nuruinternational.org/blog/ced/guest-post-by-ben-lyon-vice-president-of-business-development-for-kopo-kopo/>. Cited as viewed on May 4, 2011.
- 13 Unique Identification Authority of India, “From Exclusion to Inclusion with Micropayments,” Working paper of April 2010 as viewed May 4, 2011 at [http://uidai.gov.in/UID\\_PDF/Front\\_Page\\_Articles/Strategy/Exclusion\\_to\\_Inclusion\\_with\\_Micropayments.pdf](http://uidai.gov.in/UID_PDF/Front_Page_Articles/Strategy/Exclusion_to_Inclusion_with_Micropayments.pdf)
- 14 World Economic Forum, “The Mobile Financial Services Development Report 2011,” 2011.
- 15 Jack, W. and Tavneet Suri, “Mobile Money: The Economics of M-PESA,” January 2011.
- 16 For one example, see Mas, I. “Three Enemies and a Silver Bullet,” GSMA Mobile Money for the Unbanked blog, March 9, 2011 as available at <http://mmublog.org/blog/three-enemies-and-a-silver-bullet/> on June 10, 2011.
- 17 For a summary of Billguard, [www.billguard.com](http://www.billguard.com) at <http://ow.ly/5b48K>
- 18 See more at [www.movirtu.com](http://www.movirtu.com)
- 19 <http://bit.ly/iZFvHv>
- 20 “Scaling-up SME Access to Financial Services in the Developing World,” IFC, October 2010.
- 21 Stein, P., T. Goland, and R. Schiff, “Two trillion and counting, assessing the credit gap for micro, small, and medium sized enterprises in the developing world,” IFC and McKinsey Consulting, October 2010.
- 22 Data based upon data available on Kiva website, [www.kiva.org](http://www.kiva.org), for the week of June 13, 2011.
- 23 [www.prosper.com](http://www.prosper.com)
- 24 [www.profounder.com](http://www.profounder.com)
- 25 Data obtained from the article Africa Serious About SIM Registration posted by [www.itweb.co.za](http://www.itweb.co.za) on April 20, 2011.
- 26 MMU blog entry “Revisiting RICA” by Paul Leishman, December 4, 2009.
- 27 Teledensity Takes Dip, The Herald, May 10, 2011.
- 28 See NCA Detects Fraud in SIM Registration, posted on June 11, 2011 by [ghananewsnow.com](http://ghananewsnow.com).
- 29 For example, see Kenya’s Annual Crime Report for the Year 2010; also the Institute of Security Studies 2010 report on crime in South Africa.
- 30 More details at GSMA website, see Handset Theft.

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- 31 See “Sim Registration in Africa—Subscribers Number Down But What About Revenue and Arpu?” The author, Isabelle Gross, claims the loss of customers does not necessarily translate to dwindling income. It is difficult to determine definitively what the real effects will be until the results of all registrations projects are reviewed.
- 32 The notion of citizenship in a nation-state is a relatively new phenomenon in Africa because most African countries were carved up according to colonial administrative convenience rather than shared commonalities such as ethnic and tribal groups. Thus, the same ethnic group or tribe may exist across different countries, i.e., the Yoruba in Nigeria, Ghana, Benin and Togo, the Somalis in Kenya and Ethiopia, the Shona in Zimbabwe and Mozambique, and several others.
- 33 For details see Uganda: Amnesty International’s Memorandum on the Regulation of Interception of Communication Acts, 2010.
- 34 See Sri Lanka’s Secured Transactions Act of 2009 that entrusts movable collateral registration belonging to any individual and corporate body to the Credit and Information Bureau of Sri Lanka.
- 35 Among North African countries, Morocco has regulations, Code du Commerce, that address the registration of movable properties; a government entity, Office of Industrial Property (OMPIC) collects data from commercial registries and populates collateral information into a national electronic system. The system needs to be updated, however, in order to offer a fully integrated service. See USAID report, Legal Assessment: Registration of Secured Transactions for Movable Property. A registry project is underway in Egypt.
- 36 See Central Bank of Nigeria Act 2007 that also allows the CNB to regulate credit bureaus.
- 37 Access to Finance in Nigeria, CGAP 2009 Report.
- 38 Refer to the Borrowers and Lenders Act of 2008 (Act 773) for specific provisions.
- 39 IFC commissioned a Toolkit project for secure transactions and collateral registries. The document outlines issues surrounding collaterals and how they affect SME borrowers whose assets are mostly movable. It includes templates for collateral registry regulations and data management. See Secured Transaction Systems and Collateral Registries, IFC, 2010.
- 40 Iden, N., “Investing in MIFOS: A Framework for Forecasting Return on Investment,” The Grameen Foundation and The Mastercard Foundation, June 2011.
- 41 2008 Microfinance Technology Survey, CGAP, 2009.
- 42 Liu, A. and M. Mithika, “Mobile Banking – The Key to Building Credit History for the Poor?” USAID, 2009.
- 43 Freedom House Report, 2011.
- 44 See “At the Tipping Point: African Financial Services Come of Age” (cross published by Outlook, 2011, No: 2). The TPI evaluated 17 high growth economies in Africa using different variables including development factors and financial services infrastructure by synthesizing 2009 data from major global public institutions such as the IMF, World Bank, World Economic Forum, the CGAP, the Bank of International Settlements.
- 45 BCEAO list of banks.
- 46 See Elizabeth Holmes et al. Étude Sectorielle sur le Besoin de Financement du Secteur de la Microfinance au Sénégal, Frankfurt School of Finance & Management, May 2010.
- 47 Based on Geneva Declaration of Principles and Plan of Action of 2003 that aims to bring access to ICTs to more than half of the world’s population.
- 48 This is data derived from a posting on ITU’s website; it is not complete but covers the most recent fourth quarter of 2010.
- 49 CSI and People Input provide payment platform solutions to MFIs such as PAMECAS, ACEP, and MICROCREC. The French Bank *Société Générale*, in partnership with the US-based Obopay, is eyeing the Senegalese maker for mobile banking services.
- 50 See Interview with Lauren Marie Kiba of Orange Senegal by Mobile Money Africa.
- 51 A DFID-commissioned 2007 m-payment study argues that literacy and distrust of print materials are significant barriers that stand in the way of the uptake of mobile payments. Technological improvements and better interfaces together with trust-building marketing can tackle such problems without much difficulty, as observed in Kenya where lack of literacy or numeracy does not necessarily hamper mobile money transfer services.
- 52 See “Senegal’s Remittances in 2010 Were Worth 10% of GDP,” a report by Bloomberg, April 29, 2011.
- 53 Preferred channel because of proximity, simplicity of operation, and freedom from regulatory constraints (See World Bank 2011 Report “Remittance Markets in Africa”).
- 54 See Senegal, Pakistan in Banking Push: Islamic Finance. Businessweek, Sept. 21, 2010.
- 55 See Mamadou Alhadji LY. Senegal ICT Sector Performance Review 2009/2010. Vol.2, Policy Paper, 2010.

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56 NICT is New Information and Communication Technology.

57 See At the Tipping Point: African Financial Services Come of Age (cross published by Outlook, 2011, No: 2). The TPI evaluated 17 high growth economies in Africa using different variables including development factors and financial services infrastructure by synthesizing 2009 data from major global public institutions such as the IMF, World Bank, World Economic Forum, the CGAP, the Bank of International Settlements.

58 All figures based on official Communications Commission of Kenya (CCK) data for Q2 2010/2011, the latest official statistics available. Given Airtel's aggressive customer acquisition strategy, it is likely that their market share has increased further since end-2010.

59 All data from Safaricom's financial results for the financial year ending 31 March 2011.

60 Compare Orange money: 100,000 users and 1,500 agents.

61 <http://www.postbank.co.ke/this.news.php?title=Agency%20Banking%20with%20Postbank>

62 This is in part because wealthier (often urban) customers tend to cover those charges when sending money to poorer (often rural) customers.

63 According to the 2009 census.

64 [http://www.iiz-dvv.de/index.php?article\\_id=802&clang=1](http://www.iiz-dvv.de/index.php?article_id=802&clang=1)

65 [http://www.unicef.org/infobycountry/kenya\\_statistics.html#77](http://www.unicef.org/infobycountry/kenya_statistics.html#77)

66 SIM card registration should have supported this, but subscriber data are not all accurate, nor are there any provisions for updates.

67 <http://www.nairobistar.com/business/local/13981-cbk-to-license-stand-alone-cash-transfers>

68 <http://www.businessdailyafrica.com/Corporate+News/Safaricom+wins+backing+in+row+with+rivals+over+sharing+M+Pesa/-/539550/1120236/-/view/printVersion/-/klpcto/-/index.html>

69 Interview with Michael Joseph, former Safaricom CEO.

70 See [www.sba.gov](http://www.sba.gov)

71 See FATF Guidance on Anti-Money Laundering and Terrorist Financing Measures and Financial Inclusion at [http://www.fatf-gafi.org/document/4/0,3746,en\\_32250379\\_32235720\\_48294212\\_1\\_1\\_1\\_1,00.html](http://www.fatf-gafi.org/document/4/0,3746,en_32250379_32235720_48294212_1_1_1_1,00.html).