



**Technical Report:**  
**Product Innovation and Access to Finance in  
Africa**

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## **Abstract**

At present, the majority of the population of sub-Saharan Africa does not have access to banks or other formal financial services, and this inhibits economic growth and poverty alleviation. Conventional banking models offer limited potential to increase access, because their cost structure (high fixed costs and transactions costs) are not well suited to providing services to sparsely populated populations or those with low or volatile incomes. However, technological and business innovations around mobile money transfer (MMT), e-money, mobile banking and other forms of branchless banking are transforming the potential for access to financial services by the poor. Much of the innovation is being driven by operators other than banks. The paper discusses various different models of MMT and branchless banking, and the potential role of different operators (mobile telcos, banks etc.). By reducing transactions costs and introducing new models of distribution for financial services, innovations can significantly extend access. The business models of mobile network operators (MNOs) are particularly well suited to providing cost-effective low value transactions, with low fixed costs and reaching customers through non-conventional retail points of presence.

The paper discusses how an appropriate response by regulators can support the potential for innovative products to improve access to finance, and argues that regulators need to respond to new products and business models with a response that does not inhibit innovation and is appropriately calibrated to risk. In this regard clarity over the risks involved in different types of financial services is crucial: mobile-phone based remittances and other payments are not banking, and should not be regulated as such. Even with products that more closely resemble banking – such as smartcard or cellphone based deposits, risks can be managed in ways other than restricting them to banks. Governments also have a role to play through decisions regarding the technology that can be used for payments by government (e.g. welfare payments and pensions) and to government (e.g. taxes), and these decisions can help to stimulate private sector provision of financial services.

## Introduction

Many African economies are characterised by low levels of access to banking products, and in many countries the majority of adults are “unbanked”. Improving access to banking, and financial services more generally, is now seen as an important policy issue, not least because providing access to finance plays an important role in the reduction in poverty. Part of the reason for low levels of access to banking is that traditional banking models are relatively high cost, and make it difficult for banks to profitably provide banking services to the poor. However, the provision of financial services is being transformed by innovations originating in the telecommunications field. These include the rapid and widespread penetration of mobile phones in developing countries and the ability of telecomms platforms to provide low-cost financial services. In this paper we discuss issues around access to finance in Africa, the impact of product innovation in helping to improve access, and the impact on the banking system and regulators.

## Access to Finance

In considering access to finance it is helpful to group basic financial services into four categories:

1. Transactions (remittances, purchases, account payments etc.);
2. Savings (deposits);
3. Loans (credit); and
4. Insurance (short and long-term, pensions).

Banks typically provide the first three of these financial services. However, it is deposit-taking that forms the core of banking business, in the sense that most regulatory systems restrict deposit-taking to banks (although exemptions or restricted licences may be granted to small non-bank deposit-takers such as micro-finance institutions). Insurance products are usually restricted to licensed insurance companies and related entities (although increasingly these may be part of larger financial conglomerates that also include banks – the bancassurance model).

Notwithstanding the above points, financial services may in principle be provided by a range of types of institutions. While the specific array of service providers will vary from country to country depending on history, institutions and regulations, the broad outline of financial products and their service providers is shown in Figure 1 below.

**Figure 1: Matrix of Financial Products and Service Providers**

Service provider Product	Banks	Micro-finance institutions	Non-bank lenders	Payment/ remittance service providers	Insurance companies/ brokers/ agents
Transactions					
Savings					
Loans					
Insurance					

It is increasingly recognised that the degree of financial development in an economy is important. More specifically, a higher level of financial development:

- Supports economic growth, by boosting savings and investment;

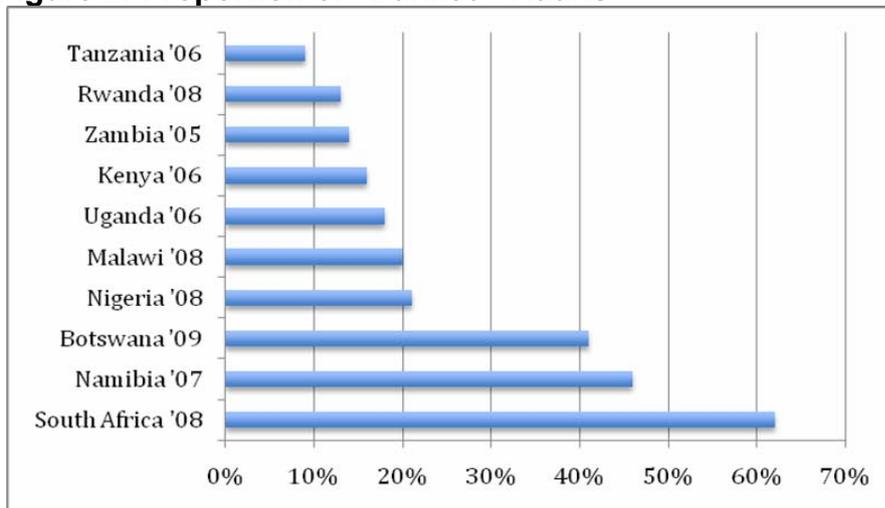
- Improves overall economic efficiency, by making financial intermediation more efficient; and
- Promotes more inclusive growth, with lower poverty and inequality, by enabling the poor to better manage their money, to borrow to finance investment, and to insure against losses.

While there are many aspects of financial development, an important one is the level of access to financial services - whether geographically or across income groups. Countries vary a great deal according to whether access to financial services is broad-based, or restricted to certain socio-economic groups or localities. Restricted access is both economically inefficient and, increasingly, politically untenable.

Although data on access to finance are often poor and inconsistently measured across countries, there have been recent improvements as access has become an increasingly important political and economic issue. One source of reliable data is the FinScope™ surveys, originally developed by FinMark Trust, that have been carried out in a number of African countries<sup>1</sup>.

FinScope™ surveys measure use and perceptions of financial services – both formal and informal – and related issues. Consumer (household) surveys have been completed in 12 countries: South Africa, Botswana, Namibia, Zambia, Kenya, Tanzania, Uganda, Rwanda, Malawi, Nigeria, Pakistan and Mozambique, while Ghana and Morocco have also expressed a strong interest. The surveys reveal a great deal of information regarding the use of both formal and informal financial products; one of the key findings relates to the proportions of “banked” (use at least one banking product) and “unbanked” adults. The results for ten countries in sub-Saharan Africa are shown in Figure 2.

**Figure 2: Proportion of "Banked" Adults**



Source: FinScope™ surveys

Results vary considerably across countries, although broadly speaking there is a relationship between the proportion of adults with access to banking and real Gross

<sup>1</sup> For further information see [www.finscope.co.za](http://www.finscope.co.za)

Domestic Product (GDP) per capita – the middle-income countries of southern Africa have a distinctly higher banking penetration.

Detailed analysis of the survey results also shows that the “banked” and “unbanked” have similar characteristics even in different countries. Banked adults tend to have regular, formal employment, live in urban areas, and have secondary or tertiary education. Males tend to be more banked than females. Unbanked adults tend to be the opposite – rural dwellers, less well educated, and unemployed or with irregular incomes. The unbanked are also predominantly poor, and heavily dependent upon social grants or private remittances as income sources.

### **Banks, Telecommunications and Financial Services**

Banks understandably tend to focus on providing services to profitable market segments. But banks also tend to have relatively high-cost business models – with branch networks, relatively well qualified and well paid staff, and sophisticated marketing operations and IT systems. This inevitably pushes banks towards better-off customers undertaking higher-value transactions or with significant financial assets, who can bear the costs of the fees and/or interest rate spreads that banks require to cover their costs and make profits. Conventional branch-based banking models are fine where customers are densely packed or sufficiently affluent to justify the fixed costs. However, they are not well suited to servicing sparsely populated, low income or asset poor markets, simply because fixed and transactions costs are too high. The branch banking model is particularly unsuited to providing banking services in rural areas – where there is insufficient population to get the economies of scale needed to cover fixed branch costs – so instead the costs are shifted to the user, who must travel long distances to reach a bank branch. Many banks have shown little interest in extending services to poor and/or rural populations, simply because they do not view it as profitable.

The scope for extending conventional branch banking business models may be quite limited given the structure of many African economies, which are predominantly poor and rural. The situation is well summarised in the following quote:

*“Until now, traditional financial services like savings accounts have been too costly and inconvenient for the poor to obtain and too expensive for banks to provide to clients who deposit just a few dollars at a time. Meeting these needs sustainably, and ensuring that these services reach the poorest, will require new models and approaches.”<sup>2</sup>*

While it is possible to force banks to broaden access to financial services regardless of financial viability, it is much more likely that sustainably enhanced access will result from business models that enable banks (or other enterprises) to do so profitably. This in return requires fixed per-customer and transaction costs to be kept low, so that even low-income customers can be serviced. Some banks have managed to achieve this and extend their services to the unbanked, as demonstrated by the success of institutions such as Equity Bank in Kenya, but this

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<sup>2</sup> Fact Sheet on “Financial Services for the Poor”, Bill and Melinda Gates Foundation, September 2009.

tends to require new types of business models specifically designed for these customers<sup>3</sup>.

Much of the potential for extending banking (or financial services more generally) to the unbanked results from the development of new forms of financial products and services outside of the traditional banking system. These make use of new technology and “branchless banking”, driven by the convergence of financial services and telecommunications. For instance, some service providers are now realising that mobile telephones, which are gaining widespread penetration in developing countries, provide an ideal means of providing financial services to the poor. The simplest service to provide is mobile money transfer (MMT), which builds on demand for sending and receiving remittances, initially within countries but now increasingly across borders. However, it is relatively straightforward to extend this to providing simple savings products (accounts) and also the means to make low-value purchases (mobile wallets/e-money). Systems such as Kenya’s M-Pesa, and Globe Telecomms’ GCash in the Philippines, show how successful such products can be at serving low-income markets.

The essential components of providing such financial products and services are microchips (on smartcards or cellphone simcards), telecomms infrastructure, an agent network and access to settlement facilities – but not necessarily banking infrastructure. Hence it may not be banks that are most successful in providing access to finance for the poor, and indeed it has often been telecoms companies, particularly cellphone companies or mobile network operators (MNOs), that have been at the forefront of innovation.

There are several reasons for this:

- MNOs have been at the forefront of providing (and making money from) high-volume low-cost services, particularly text messages, which help to bring down transactions costs;
- the pre-paid airtime business model (which essentially represents stored value on a chip or smartcard) can easily be extended to enable that stored value to be used for more than just the purchase of airtime;
- the SIM-based (front-end) system, which is under the control of the MNO, is secure and can easily be extended to encompass financial transactions;
- MNO’s transactions (back-end) processing systems (e.g. prepaid billing) can easily be extended to encompass financial transactions, and are much simpler and cheaper to run than core banking systems;
- MNOs typically have widespread retail/agency networks and are used to handling large numbers of relatively low value transactions through them;
- retail agents have experience in conducting basic know-your-customer (KYC) procedures;
- technological innovation combined with market growth has led to rapidly falling unit operating costs;

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<sup>3</sup> However, even Equity Bank believes that it may soon reach a ceiling on the number of viable branches and ATMs (CGAP “Scenarios for Branchless Banking in 2020, Focus Note 57, October 2009)

- cellphone ownership is increasingly widespread, and the number of cellphone owners in Africa exceeds the number of people with access to banks; and
- MNOs have strong brands and mass marketing networks that can easily be extended beyond basic telecomms services<sup>4</sup>.

While it is MNOs that have been amongst the most innovative, their products and services – outlined in more detail below – are part of a broader push towards servicing the unbanked/low income groups through branchless banking models. Cellphone-based services are one aspect of branchless banking, but the concept also accommodates financial services delivered through non-bank agents such as retail stores. The key is a secure technology system to accommodate the delivery of financial services, and the main alternative to cellphone-based systems is smartcard and point-of-sale (POS)-based systems. Whereas cellphone based systems tend to dominate in Africa, partly because of the low level of banking penetration and the poor state of fixed communications infrastructures, in Latin America smartcard/POS-based systems tend to dominate. Cellphone-based systems have the advantage of widespread distribution of access – every cellphone is an access point or network terminal for initiating (some) transactions – whereas for card/POS systems access points are more restricted (although still widespread), being the retail agent where the POS is located. Card/POS systems have the advantage of improved security features if biometrics (e.g. fingerprints) are used, whereas the PIN-based security of cellphones is weaker.

However, there are many similarities between cellphone banking and card/POS-based systems: by minimising the need to provide their own physical infrastructure, and by paying agents on a commission basis rather than through a fixed salary, branchless banking models minimise fixed costs and thereby make much smaller scale operations viable. As Mas (2009, p.72)<sup>5</sup> notes, “it is hoped that by moving financial services beyond banks’ traditional ‘bricks-and-mortar’ infrastructure and shifting them to a more scalable, variable cost channel, financial services can be provided profitably and sustainably to segments of the population that are poorer or more remote, and that are currently neglected by regulated financial institutions”.

## Product Innovation

A variety of new financial products have been made available in recent years. These include:

**Person-to-person (P2P) money transfers or remittances.** The most well-known example of this in Africa is probably the M-Pesa service operated by Safaricom in Kenya. M-Pesa offers cellphone-based P2P transfers within Kenya. Within two years of its introduction M-Pesa had grown to over 7 million customers (far higher than the

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<sup>4</sup> See CGAP Brief “The Role of Network Operators in Expanding Access to Finance”, May 2009

<sup>5</sup> Mas, I (2009) “The Economics of Branchless Banking”, *Innovations* 4(2), Spring, pp.57-75

number of adults with bank accounts in Kenya)<sup>6</sup>. M-Pesa is used primarily for urban-to-rural intra-family remittances. Its popularity is due to the low cost of transfers relative to alternatives, confidence in the system (trust/reliability), the speed of transfers and the convenience of a widespread M-Pesa agent network handling cash-in/cash-out functions<sup>7</sup>.

The dramatic (and unexpected) success of M-Pesa has stimulated the growth of similar mobile money transfer (MMT) services elsewhere, including M-Pesa in Tanzania, MTN Mobile Money in Uganda, Rwanda and Ghana, Zain Zap in Kenya, Uganda and Tanzania), Splash in Sierra Leone, and various other projects in Senegal, Madagascar, Nigeria, Somalia and South Africa. MMT services are also being rolled out elsewhere in the world, for instance with a direct spin-off of M-Pesa being established as M-Paisa in Afghanistan.

While most of these services relate to intra-country transfers, there is huge demand for international cross-border remittances, not least because existing operators (banks or dedicated remittance services such as Moneygram or Western Union) are very expensive. Cross-border services tend to raise more concerns from Anti-Money Laundering (AML) or exchange control perspectives. However, these are not insurmountable barriers and M-Pesa has recently launched a UK-Kenya remittance channel.

**Remote Payments:** these can cover a wide range of transactions including person-to-business (P2B), business-to-person (B2P), business-to-business (B2B) and government-to-person (G2P). Typical P2B payments include account payments (e.g. for utilities), loan repayments (e.g. to micro-finance institutions), and micro-insurance premiums. B2P payments are primarily wages/salaries, but could also include payment from private pension schemes. B2B payments include transactions between merchants in different locations (including payment for airtime by resellers). G2P payments are primarily pensions and welfare payments to the poor. POS/card based schemes for welfare payment distribution are widely used in Brazil and South Africa, and have recently been introduced in Botswana.

**E-money/e-commerce:** smartcards or cellphone simcards can be used as stores of value to be used for low-value purchases. Money loaded on the card can then be used as a cash substitute, e.g. in stores or for public transport. Transactions are generally initiated through a proximity reader or a POS machine, usually with biometric or PIN-based security features. While cellphone-based services have mostly started out as MMT services, this is rapidly being extended, e.g. Zain's Zap service can be used for settlement of electricity, water and satellite television bills (remote P2B), and purchase of petrol and groceries. Nevertheless, cellphone or

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<sup>6</sup> In 2009, M-Pesa was used by 40% of all adults in Kenya. By contrast, only 22% of adults used formal financial sector products (banks, postbank, insurance etc.) (see "The Results of the Finaccess National Survey", June 2009, FSD/Central Bank of Kenya).

<sup>7</sup> For further details see CGAP Brief "Poor People Using Mobile Financial Services: Observations on Customer Usage and Impact from M-PESA", August 2009

card-based e-money is at an embryonic stage in Africa, compared to much more widespread usage elsewhere, particularly in Asia.

**Savings products:** most card or phone based products in Africa have been designed for transactions purposes (money transfer or bill payment) rather than as a longer-term store of value. However, there is no technological reason why they cannot be extended to accommodate savings products. Smartcards can easily accommodate several wallets, such as a transactions wallet for remittances, purchases and bill payments, and an interest-bearing savings wallet. While M-Pesa was designed as a remittance service, a large number of customers are using it as an informal savings account, simply by not withdrawing their funds as soon as they are available. M-Pesa based savings are perceived as safe, convenient and flexible. Similar processes are possible with smartcard-based welfare grant payments, where recipients do not have to withdraw the full amount once it is credited to their cards.

**Cellphone and internet banking** services have been introduced by many banks. Primarily, however, these are seen as an additional channel for existing account holders, rather than as a channel for attracting new (unbanked) customers. While very convenient, and lowering transactions costs for existing customers, banks in general have not in general developed new business models around these channels.

**Agency banking:** there is scope for banks to reduce costs by using agents to carry out simple customer functions, such as account opening, accepting cash deposits and providing cash withdrawals. Suitable agents are typically retail stores and post offices. As noted above, branchless (agency) banking has become widespread in Latin America, particularly in Brazil, through the use of POS devices and smartcards.

Various business models and operators are involved in providing these innovative products and services. However, it is instructive that many of them are offered by MNOs or other technology-based companies rather than banks. Banks have focused on adding additional channels to serve existing customers (such as internet banking), whereas MNOs have seen an opportunity to develop new business models focused on underserved or un-served markets. Furthermore, it has been much easier for MNOs to extend their businesses from telecommunications to financial services than for banks to diversify their offerings within the financial services sector. In general, MNOs have been innovating while the banks have been relegated to providing a supporting role, such as the provision of trust accounts and access to the settlement system. Where banks are playing a more prominent role, this has often been forced by regulatory restrictions. There are some cases of joint ventures between banks and MNOs or technology companies. For instance, Zain Zap is a JV between Zain (an MNO), Standard Chartered Bank and Citibank. In Botswana, SmartSwitch is a joint venture between the developer of a technology (switching) platform and a banking group.

Another important point is that the rollout of the above services does not require the prior existence of a developed banking infrastructure. However, it does require a basic (but not unduly sophisticated) telecoms infrastructure. Indeed, some of the most innovative products have come about in jurisdictions where banking conditions are highly challenging; examples include M-Paisa in Afghanistan; Splash money in

Sierra Leone; eCash in Somalia and Cellpay's cellphone-based system for paying ex-combatants in the Democratic Republic of Congo.

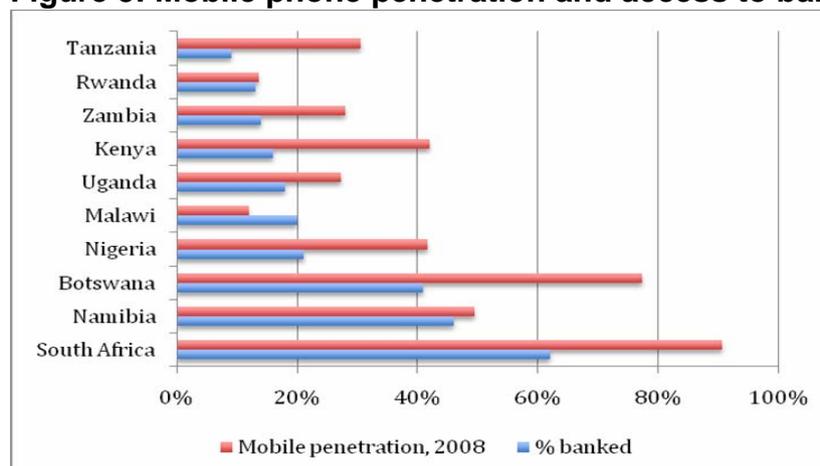
### Improving Access?

To what extent are technology based products and services really extending access to finance? Back in 2006, David Porteous outlined several factors that gave mobile banking the potential to be transformational by significantly extending access to finance, for the following reasons:

- It uses existing mobile communications infrastructure which already reaches unbanked people;
- It may be driven by new players, such as telcos, with different target markets from traditional banks;
- It may harness the power of new distribution networks for cash transactions, such as airtime merchants, beyond the conventional merchant POS or ATM networks of banks; and
- It may be cheaper than conventional banking, if the offering is competitive<sup>8</sup>.

To a large extent, these conditions are being fulfilled. As Figure 3 shows, in many African countries, more people use mobile phones than use banks<sup>9</sup>. FinScope survey results from Botswana in 2009 show that of unbanked adults, nearly 70% have mobile phones. And as we have discussed above, most of the new products are being driven by MNOs rather than banks, and use new distribution networks, and offers lower costs than conventional bank products. Survey results from Kenya show that more people use MMT than use banks, and furthermore the degree of “financial inclusion” – the extent to which adults use one or more financial products – has dramatically increased.

**Figure 3: Mobile phone penetration and access to banks**



Source: FinScope and ITU

<sup>8</sup> Porteous, D (2006) The Enabling Environment for Mobile Banking in Africa (Report for DFID by Bankable Frontier Associates).

<sup>9</sup> In fact the potential using mobile phones to extend access to banking is even greater than Figure 3 suggests, because the mobile penetration figures represent % of the population while the access to banking figures represent % of adults.

While few countries yet have sufficient quantitative data to prove the point, qualitative evidence regarding the types of products and services being offered, and the nature of the clientele, indicate very strongly that a significant proportion of users are unbanked. Again from Kenya: in Kibera, a high-density housing area of Nairobi, with 1 million people, there are no banks, but there are 40 M-Pesa agents providing basic financial services to the population<sup>10</sup>. Perhaps noting developments elsewhere in East Africa, the Governor of the Bank of Rwanda has also called for innovative banking products. Governor Kanimba “has challenged bankers to think out of the box and be innovative when it comes to offering products and services to clients . . . . . only innovations and introduction of new products will attract clients to access financial services. [He] said that although banks were rolling out new branches across the country, it was equally important for the banking sector to complement these expansion programmes with increased product innovation and diversification”<sup>11</sup>.

It is also clear that development agencies see a great deal of potential in mobile and branchless banking in advancing access to finance. The Gates Foundation has put \$350 million behind its “Financial Services for the Poor” initiative, partly because of the opportunities now on offer, whereby “New technologies and innovative partnerships make it possible to create a “next-generation” banking system”. Other donors and development agencies – notably the World Bank, CGAP and DFID – have been actively involved in promoting access to finance using innovative product and services.

### **Implications for Regulators**

Innovation in branchless banking and cellphone-based products and services raises new and important issues for regulators, and the regulatory response has major implications for how the industry develops. The key issues that regulators have to face are:

- To what extent should these new products and services be regulated as banking operations, or as other financial service operations (such as payments service providers)?
- Balancing the need for prudential regulation with consumer protection;
- Implementing anti-money laundering (AML) regulations; and
- Balancing a supportive enabling environment with the need to manage and reduce risk.

Regulatory structures vary considerably and there is no uniform approach across jurisdictions in Africa. This is partly a reflection of the speed of innovation: technology and business models are changing so fast that issues have arisen that were not anticipated when current regulatory environments were established. In such a fluid and undefined environment, different regulators react in different ways, depending their assessment of the issues noted above. A recent study of the potential of

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<sup>10</sup> CGAP Brief “Poor People Using Mobile Financial Services: Observations on Customer Usage and Impact from M-PESA”, August 2009

<sup>11</sup> The New Times (Rwanda), November 5, 2009.

mobile-phone banking in five Southern African countries found that every country had a different regulatory framework<sup>12</sup>.

The issues are most acute with pure money transfer or remittance services. Traditionally, these have not been treated as banking operations, and have either been regulated as payments service or e-money providers (if such a regulatory capacity exists in a particular jurisdiction) or have been unregulated. The Central Bank of Kenya (CBK), for instance, took a liberal view of M-Pesa when it was proposed by Safaricom (an MNO), deciding that it was not banking (and hence did not have to be provided by a licensed bank). As the CBK did not at that time have any relevant payments service provider or e-money regulations, M-Pesa was essentially unregulated. Nevertheless, the CBK plays an oversight role and closely monitors M-Pesa and its impact on the financial system. This supportive but hands-off approach by the regulator has helped the dramatic growth of M-Pesa, firstly by allowing it to be promoted by a non-bank, and secondly by not burdening it with expensive regulatory and compliance requirements<sup>13</sup>. Whether regulators make “access friendly” decisions will be one of the main factors determining the success of branchless banking and its ability to improve access to finance<sup>14,15</sup>.

Deeming MMT not to be banking, and hence allowing the service to be offered by MNOs or other non-bank operators, would appear to be logical. The essence of banking is deposit-taking, and hence a bank is defined by the nature of its balance sheet: a bank holds deposits that are liabilities to its customers. MMT only entails holding customer liabilities temporarily, i.e. during the period between the payment of cash by the sender and its receipt and withdrawal by the recipient. The essence of the MMT business model is remitting money from one person to another, and not the holding of money on behalf of those persons. MMT transactions may be many, but they tend to be small (and can be restricted through value caps), so the aggregate sums of money involved are unlikely to be systemically important. The balances held by MNOs or other MMT operators must be fully backed by wholesale deposits held at a bank, so there is always real money backing for virtual funds. MMT operators are not permitted to intermediate (lend) these funds, so this further reduced risk to consumers. And even if the wholesale deposits held by MMT operators become systemically important, the resulting risks can be mitigated by splitting these between several banks.

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<sup>12</sup> World Bank: Trade in Financial Services: Mobile Banking in Southern Africa (2009 – World Bank Mozambique Office). The five countries reviewed are Mozambique, Angola, South Africa, Malawi and Zambia.

<sup>13</sup> For further information on the regulator’s approach to M-Pesa, see Kimenyi, M. & Ndung’u, N. (2009) Expanding the Financial Services Frontier: Lessons from Mobile Phone Banking in Kenya (Brookings)

<sup>14</sup> The Governor of the Bank of Rwanda, quoted above, also stated that “The Central Bank as the regulator is determined to help banks introduce new product lines”.

<sup>15</sup> CGAP “Scenarios for Branchless Banking in 2020”, Focus Note 57, October 2009

From the regulatory perspective, the focus should be on consumer protection issues rather than considering these temporary customer balances to be deposits. Key consumer protection issues include:

- ensuring that the electronic “cash in transit” balances are fully backed by money in a bank account (the trust account principle), so that the cash in transit balances are always safe;
- ensuring system integrity (safeguards against IT failure and fraud; audit trails; adequate Disaster Recovery Procedures (DRP); secure access to handsets/sim cards); and
- agency network trust and reliability (agent training and accreditation; compensation in the event of agent fraud; maintenance of adequate float).

Finally, there are AML issues to consider, which require KYC procedures, audit trails, value capping to prevent the movement of large sums of money, and – for cross-border remittances – co-operation between regulators.

Therefore while regulatory oversight of MMT may be justified, this is mainly from consumer protection and AML perspectives, rather than from a banking (deposit-taking) perspective.

Having said that, several of the new products and services, and even MMT in practice, do encroach into deposit-taking territory. In Kenya, although M-Pesa was designed as a money transfer facility, many of its customers are using it as a savings account. Several other new products also involve value being stored on the system for a longer period of time; these include recipients of welfare grants, pensions, or salaries deposited onto a card who may not withdraw the full amount as cash; the loading of cash onto cards or phones for future purchases (e-money) or as specifically designed savings products.

Even so, an appropriate regulatory response should be proportionate to risk. For small values, the main risks relate to consumer protection rather than financial system stability, and this is where regulatory efforts should be devoted. The best approach would be dedicated payments service provider or e-money regulatory categories (the latter, for instance, has been introduced in the EU), dealing with issues such as ensuring effective trust account systems, record-keeping and fraud prevention. Referring back to Figure 1, this would introduce a whole new category of financial product (e-money) and a new type of financial institution.

**Figure 4: Matrix of Financial Products and Service Providers**

<b>Service provider Product</b>	<b>Banks</b>	<b>Micro- finance institutions</b>	<b>Non- bank lenders</b>	<b>Payment/ remittance service providers</b>	<b>Insurance companies/ brokers/ agents</b>	<b>e-money provider</b>
Transactions						
Savings						
Loans						
Insurance						

Some countries have, however, forced new products and services to be regulated under banking legislation – perhaps reflecting lobbying by established banking operators to protect their positions, or perhaps a very high degree of risk-aversion.

However, this may be counterproductive, for several reasons. First, it enables banks to use their monopoly power (as holders of banking licenses) to appropriate MMT/e-money business, even if they may not be the most efficient channel to deliver such products; second, this could inhibit innovation - it is instructive that almost all of the innovation in this field has come not from banks but from MNOs; third, banks have a completely different cost structure to MNOs - and have much higher costs in general - and as a result this may lead to higher transactions costs for MMT services. This would in turn undermine the whole business model, and the ability to offer financial service to the poor. One of the key reasons that M-Pesa has done so well is that transaction costs are so much lower than alternatives (such as banks). Overall, MMT and related developments have been most successful where it has been rolled out in competition with banks, with supportive regulators (as for M-Pesa) rather than where regulators have forced it into the arms of banks (as in South Africa).

### **Box: SmartSwitch Botswana – Branchless Banking**

SmartSwitch Botswana operates an innovative payments network based on smartcards and POS machines combined with a switching system, all linked through the cellphone data (GPRS/EDGE/3G) network. SmartSwitch can accommodate payments, transfers and stored-value. Its first major use has been in the distribution of government welfare payments for the poor, whereby recipients are issued with smartcards which are credited with monthly payments (G2P). As these welfare payments have to be spent on specified commodities including food and other goods, the cards can be used in a network of retail stores equipped with POS machines. Although it is primarily a transfer payment, recipients can choose to leave part of the value on their cards as savings balances. A pilot system has been well received by recipients and retailers, is reported to have reduced the scope for corruption and abuse, has low operating costs for government, and is now being rolled out nationwide.

SmartSwitch also accommodates wage payments whereby employers can pay their employees by crediting salaries to smartcards (B2P). This value can be spent directly in shops equipped with POS machines, or exchanged for cash at a bank or any participating retail agent. Cardholders can also do in-country money transfers (P2P), 3<sup>rd</sup> party bill payments (P2B) and balance enquiries. Money can also be transferred to a savings wallet on the card, where it earns interest. It can also be used in a similar manner for the distribution of old age pensions and cash allowances to social grant beneficiaries. There are also plans to enable cash deposits at participating retail agents.

Although it is still at an early stage, the SmartSwitch system is extending basic financial services to the unbanked in Botswana. The initial participants – social grant recipients – are amongst the poorest in the country and previously financially excluded. It has been assisted by government decisions regarding welfare payments, which has helped to pay for the establishment of the retail POS machine network. The rollout has also been assisted by the prior existence of a national registration and identity card system. The regulator has been supportive by authorising the establishment of the system even in the absence of dedicated payments service provider or e-money regulations. At the core of the system is a formal agreement with one of the local banks, under which all values loaded to or stored on cards are fully backed by money balances in a trust account. The fact that the funds are backed by a single wholesale account rather than requiring customer card accounts to be backed by individual bank accounts has enabled costs to be kept low, thereby improving the attractiveness of the product to government, employers and individuals. The only outstanding regulatory approval relates to the ability to accept deposits at retailers; if this is given then a full card/POS-based branchless banking system will be in operation.

## Supportive Conditions for Innovative Business Models

Tying all of the above together, we can identify supportive conditions for the development of innovative business models, financial products and services such as MMT, e-money and branchless banking. These include:

- low financial penetration, and high cellphone penetration;
- balanced (political and regulatory) influence of banks and mobile network operators (rather than being skewed towards banks);
- an important role for remittances, whether internal or cross-border;
- an existing national identify system (to help with AML, KYC and validating transactions);
- demographic change leading to a greater number of young consumers, and mobility within (or between) countries; and
- an accommodating regulatory approach, by:
  - Providing a simple regulatory structure;
  - Not requiring a banking licence for MMT or e-money operations;
  - Providing for payments service provider or e-money licences;
  - Allowing (cross-border) platform sharing between operators (to help keep costs down);
  - Allowing banking operations to be outsourced and conducted by agents (e.g. account opening, cash-in, cash-out) without burdensome security requirements; and
  - Ensuring flexible AML/KYC regulations (e.g. calibrating the strictness of regulations to the values involved, so that poorer customers who may not have proof of physical address are not excluded from access to products and services, but with value caps so that AML risks are not compromised).

Governments also have a role to play, for instance regarding choices concerning how pensions and social welfare grants are paid. Typically, such payments are cash-based and inefficient (with security costs/risks and high administrative and distribution costs), and there is potential for significant cost savings by moving to electronic payments. Such a move can also help to “kick-start” access, by bringing substantial segments of the population within the ambit of formal financial services, where additional products and services besides simply payments (such as savings accounts) can be offered. Government decisions can also boost private sector activity by providing an assured market and providing a quick way to overcome scale barriers to entry.

If the appropriate conditions are in place there is potential for both banks and non-banks to play a role in developing innovative financial products and services through branchless banking operations and mobile phone networks, which can have a significant impact on extending access to finance.