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Mobile Banking in Africa: The Current State of Play

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Africa's Economy

African economies experienced high growth towards the end of the colonial period, but this trend was reversed by socialist policies after independence, and eventually exacerbated by the slump and recession in the world economy following the oil crises of the 1970s. African economies then fell into unprecedented levels of debt (which was the heaviest relative to per capita income in the world).¹ World Bank structural adjustment programmes in the later 1980s were aimed at liberalising markets, reducing the role of the state and freeing trade.²

¹Madison Angus, *Contours of the world economy, 1-2030 AD: Essays in macro-economic history*, (Oxford: Oxford University Press, 2007).

²Van der Geest Willem, (ed) *Negotiating structural adjustment in Africa*, (London: James Currey, 1994).

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These programmes were met with highly ideological opposition,³ but global market liberalisation soon found its way into the policy debates of African countries. In the 1990s African economies subsequently gradually returned to growth for the first time since the late 1960s. GDP growth in Africa declined from 4.7 % between 1965–1973, to 1.2 % between 1981 and 1985, and to 1.7 % in 1991. As the twenty-first century dawned upon Africa, sustained strong growth returned in market oriented economic contexts. Global market liberalisation and the democratisation of governments following the demise of the USSR brought about a fundamental change in Africa.⁴ Overall deregulation of financial services and improved factor mobility enhanced business prospects for new African enterprises. During 2013/14 Sub-Saharan Africa (SSA) (excluding South Africa) maintained GDP growth of 6 %, which was well ahead of the average for the global GDP growth of around 2.4 %.⁵ Rapid economic growth depends on optimal factor mobility, including the movement of money. Africa has therefore experienced unprecedented growth in infrastructure and telecommunication investment and information technology connectivity. Mobile technology developments dovetailed these trends in Africa. The mobile industry is a key driver of economic growth and employment across Africa. In 2014 the broader mobile ecosystem contributed 5.7 % to SSA's GDP. This was a contribution of \$102 billion in economic value and supported 4.4 million employment opportunities in the region. The mobile ecosystem contributed approximately \$15 billion to public finance through taxes paid.⁶

³ Husain I., (1994) "Structural adjustment and the long term development of Sub-Saharan Africa", in Rolph van der Hoeven and Fred van der Kraaij (eds) (1994) *Structural adjustment and beyond in Sub-Saharan Africa*, (London: James Currey: 150–171).

⁴ Babarinde Olufemi, "Africa is open for business: A continent on the move", *Thunderbird International Business review*, 51, (2009): 319–328.

⁵ Demirguc-Kunt Asli, Klapper Leora, Singer Dorothe and Van Oudheusden Peter, *The Global Findex Database 2014: Measuring Financial Inclusion around the World*. V. 7255. (Policy Research Working Papers, The World Bank, 2015).

⁶ GSMA, "2014 State of the Industry Mobile Financial Services for the Unbanked", accessed January 12, 2016, www.gsma.com/mmu.

Mobile Banking Framework

Mobile banking is the most innovative development in financial systems and provides a platform for payment services without the need for a formal bank account. Mobile banking has the additional advantage of improving financial inclusion, providing cost savings for money transfers and its potential for socioeconomic development across the world. Mobile payments or m-payments are defined as ‘the use of a near-field communication (NFC) enabled mobile device or a contactless card on a SIM to conduct payment in a proximity setting by connecting to a server, perform authentication and authorisation, make a payment, initiate accounting and finally confirm the completed transaction’.⁷ Mobile network operators provide the network infrastructure required for mobile payments (m-payments), thus providing convenience and ease of use to customers. They are best placed to provide the data, bill clients for purchases made, and settle payments with merchants. It was a logical step for network operators to provide financial services to customers that were previously the exclusive domain of financial institutions. It was also a sound idea for financial institutions to enter into partnerships with the mobile networks to provide financial services.

In the developed world banks and other financial institutions are increasingly making the shift from ‘human’ to ‘digital’ banking, placing growing emphasis on flexibility of use and ease of access to banking services, payment mechanisms and integrated money management and monitoring platforms. It has been established that digital usage has become closely linked to customer loyalty,⁸ despite forfeiting the anonymity of paper currency with non-anonymous electronic money.⁹ In the absence of well-established bank networks in developing countries people

⁷De Reuver Mark, Verschuier Edgar, Nikayin Fatemeh, Cerpa Narciso and Bouwman Harry, Collective action for mobile payment platforms: A case study on collaboration issues between banks and telecom operators. *Electronic Commerce Research and Applications*. 14, 5 (2012): 331–344.

⁸Arnfield Robin, *The customer’s journey: Transforming the branch network*, (ATM Marketplace: Wincor Nixdorf, 2015).

⁹Rogoff S. Kenneth “Costs and benefits to phasing out paper currency”. *NBER Macroeconomics Annual*, 29, accessed December 08, 2015, <http://www.nber.org/papers/w20126>.

tend to display a preference for cash and a distrust or scepticism towards mobile money transfer mechanisms.¹⁰ In developing countries the security concern to ordinary people carrying cash has become an additional motivation to address financial exclusion of the vast unbanked sector. Globally it is estimated that 2.5 billion people, of whom more than half are adults, have no bank accounts. In Africa only one in four persons has a bank account, but eight in ten have access to a mobile phone. By mid-2015, 200 million persons across Africa were accessing the Internet through mobile devices.¹¹ Apart from the notable cost saving of electronic payments,¹² far-reaching innovation enabled by mobile technologies can enhance the current growth trajectory of Africa.

Mobile Banking in Africa

Successful mobile banking penetration in developing economies has taken place mainly in Africa and South Asia. Sub-Saharan Africa had more unique subscribers than Latin America by late 2014, which placed the region in third position behind Asia Pacific and Europe. During the first decade of the twenty-first century, SSAs subscriber base increased by 13 %, which was faster than the global average growth of 6 %. The most success has been achieved in SSA with 81 % mobile money according to the GMSA global survey.¹³

By the end of 2015 SSA unique subscribers had risen from 200 million in 2010 to 386 million (with a penetration rate of 41 %) and 722 million connections (or a 77 % penetration rate). Mobile broadband connections were at 24 %, while data growth was driving revenues and operator investments. The mobile penetration rate of the two most populous countries in SSA, namely Ethiopia and Nigeria, is at 23 % and 31 % respectively. The impressive growth in the mobile market boosted revenues hand-

¹⁰ Dzikot Vivian Afi, "Making sense of mobile money in urban Ghana: Personal, business, social and financial inclusion prospects", IMTFI, accessed November 18, 2015, <http://blog.imtfi.uci.edu/2013/09/making-sense-of-mobile-money-in-urban.html>.

¹¹ Ibid.

¹² Babatz Guillermo, *Sustained effort, saving billions: lessons from the Mexican Government's shift to electronic payments*, (Better than cash Alliance, Mexico, 2013).

¹³ Ibid.

somely, but the rate of revenue increase has slowed down as more markets were integrated into mobile operations. The Global Financial Crisis had a profound adverse effect on mobile operators' revenue growth. Revenue growth was restored to around 5 % in 2010 and rose to around 7 % in 2013, but slumped to 3.5 % in 2015. This slowdown was not only a result of slower growth in subscriber numbers, but also cuts in mobile termination rates, intense price competition, new low-income customers spending proportionally less on communication services and the depreciation of most SSA currencies.

In the four regional blocks in Africa, the Southern African Development Community, with 15 member states, has the most developed mobile market. There are significant variations in penetration levels within the block, with 19 % in Madagascar to 70 % in Botswana and Mauritius. South Africa is the largest mobile market and accounts for around 33 % of total subscriptions in the entire region. By 2015, South Africa had 38 million unique subscribers in the block of 132 million unique subscribers. Technology transfers (uptake of 4G technology) are advanced with mobile broadband accounting for 25 % of total connectivity. SADC is also the second largest smartphone market in SSA. The leading country in mobile technological innovations over the last five years is Kenya, referred to as 'Silicon Savannah', the epicentre of this development.¹⁴ The regional block known as the East African Community, has a mobile penetration of less than 25 % (less than four in ten persons) of 63 million unique subscribers. Kenya has the highest mobile penetration rate of 42 % and Burundi 17 %. Access and affordability barriers to the two-thirds of the rural majority in the block explain the low penetration levels. The expansion of mobile broadband networks assisted the rollout of 3G and 4G technology, which of course is also enhanced by the growing adoption of cheaper smartphone devices. ECOWAS (Economic Community of West African States) is the West African regional block, with 163 million unique subscribers, that make up around 40 % of SSA subscribers. The region has a mobile penetration rate exceeding the SSA average, but the penetration rate varies significantly amongst members: Nigeria has 83 million subscribers and a penetration rate of 17 %, while Mali has a 68 % penetration rate. Technology innovation is slow in this region, with

¹⁴Ibid.

2G accounting for 90 % of mobile connections. For data-only operations, 4G networks are being introduced in Côte d'Ivoire, Ghana and Nigeria, but those services are primarily limited to a few major centres. Smartphone usage accounts for only 20 % of total connections. In the 10 member Economic Community of Central African States mobile penetration reached 38 % by 2014, with 43 million unique subscribers in 2015. The level of technological innovation is low, with 90 % usage of 2G technology, although broadband introduction in Angola and Gabon facilitates the introduction of 4G. Smartphone usage is only at 15 %.¹⁵

In most SSA markets lively competition exists between service providers, except in Ethiopia. Ethiopia only has one active mobile network operator, Ethio-Telecom (also the only fixed line provider), which is a legacy of the former nationalisation of the economy. In some markets four or five operators compete, resulting in a very low Herfindahl-Hirschman Index (HHI) of 4834. This means that intense competition keeps costs low—a phenomenon that impacted negatively on operator margins resulting in discouraging new entrants to the market and gradual consolidation. In Tanzania Airtel acquired Zantel; in Kenya Safaricom and Airtel jointly acquired Yu's assets in the Republic of Congo, and Uganda Airtel also acquired the competitor Warid Telecom. Consolidation and expanding networks incentivised technological innovation, with expanding 3G uptake and the gradual 4G delivery in the technology-leading markets of Angola, South Africa and Zimbabwe. The new technology is gradually supported by the growing use of smartphones, as these devices become cheaper. In 2015, 160 million smartphones were in use in Africa.¹⁶

Kenya is especially known for mobile banking innovation leadership in Africa. This country has adopted widespread and diversified use of mobile payments. It is estimated that 60 % of the GDP of Kenya moves through mobile money.¹⁷ This is mainly as a result of the launch in March 2007 by Vodafone for Kenya's largest mobile network provider Safaricom

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ Pénicaud Claire, (2013) "State of the Industry: Results from the 2012 Global Mobile Money Adoption Survey Tables and figures", GSMA: Mobile Money for the Unbanked, accessed May 12, 2015, https://www.lib.uwo.ca/files/business/citation/Citing_Business_Sources_-_Chicago.pdf.

of the mobile money product M-Pesa ('M' denoting mobile and Pesa is the Swahili word for money). M-Pesa facilitates person-to-person transfers through the use of mobile phones. It was observed that people were selling airtime into a network akin to a banking grid, which enabled the recipient to resell the airtime and basically get 'cash' for the sold airtime. In remote areas and in the absence of extensive branch networks, mobile phones were used to facilitate cheap and instant payments to the broad population. M-Pesa uses a mobile phone to transfer money and deliver finance, and in the future it will also develop micro-financing facilities. M-Pesa enables users to deposit money into an account stored on their mobile phone. The account holder can then use a Short Message Service (SMS) using a secured PIN to send money to other users or withdraw deposited money at different retail outlets or pay for goods and services.

This product has been so successful that four years after its launch, it is estimated that approximately 70 % of all households in Kenya are using M-Pesa. As the population is spread throughout large parts of Kenya, the M-Pesa system allows users via an SMS to transfer money to another without having to physically transfer cash (saving on time and transport). As this system makes use of SMS technology, it provides a wide range of users the ability to use this technology as only a basic hand-held device is needed. The use of m-technology greatly reduces the cost of sending money over large distances, provides certainty of process and decreases the risk of theft. The M-Pesa system also consists of agents dispersed around the country that convert e-money into currency and vice versa.¹⁸ Only during the last 11 months of 2014 transactions to the value of more than 2.1 trillion Kenyan shillings were conducted through M-Pesa in Kenya—that is almost half the value of the country's GDP.

Soon afterwards product innovation led to the introduction of a related product, M-Shwari, a savings and loan facility. M-Shwari signed up 9 million customers and attracted deposits to the value of 135 billion (\$1.6 billion) Kenyan Shillings within the first two years of its operation. The loans issued through M-Shwari were cheaper to administer and easier to scale than the micro-lending schemes in operation. The M-Pesa facility

¹⁸Jack William and Suri Tavneet, "Risk Sharing and Transactions Costs : Evidence from Kenya's Mobile Money Revolution", *American Economic Review*, 104, 1 (2014): 183–223.

was later also linked to formal bank accounts through a partnership with the Equity Bank, based in Kenya. The product was named M-Kesho, a facility that used the M-Pesa platform and agent network to offer more banking services to customers, such as interest-bearing accounts, loans and insurance.

M-Pesa was soon introduced in neighbouring African countries. In 2008 M-Pesa was launched in Tanzania, but did not attract the same subscriber volumes as in Kenya. Vodafone introduced strategic changes to its service delivery to improve its market position in Tanzania, which resulted in the rapid expansion of the use of mobile technology. By March 2013 M-Pesa users rose to 5 million in Tanzania and by the end of 2015, Tanzania was the country in Africa with the highest proportion of registered mobile money account users per 1000 adults—1208 per 1000, compared to 1018 in Kenya, 762 in Uganda and only 76 in South Africa.¹⁹ Since the launch of M-Pesa other competitors such as Mobikash, Orange Money and Airtel Money now offer similar services to M-Pesa. M-Pesa has since spread to 10 countries: Tanzania, South Africa, Democratic Republic of Congo, India, Mozambique, Egypt, Lesotho, Albania and Romania; Vodafone has recently announced that it will provide M-Pesa in Ghana after launching a pilot project in August 2015.²⁰

M-Pesa in South Africa

Vodacom South Africa launched M-Pesa in September 2010 in partnership with Nedbank, and it was hoped that it would be as successful as the project in Kenya. South Africa, unlike the markets in East Africa, has a highly developed financial system and local banks have already made banking easily accessible to the low-income earners by increasing the number of branches in rural areas and providing bank accounts aimed specifically at the unbanked population. Nedbank was relying on the

¹⁹ Ibid.

²⁰ Steafel Eleanor, “Vodafone brings mobile money to 15m people without bank accounts in Ghana”. *The Telegraph*, December 7, 2015, <http://www.telegraph.co.uk/finance/personalfinance/bank-accounts/12036626/Vodafone-brings-mobile-money-to-15m-people-without-bank-accounts-in-Ghana.html>, accessed December 15, 2015.

extensive mobile phone penetration in South Africa as well as the 13 million economically active South Africans without bank accounts, to grasp the opportunity M-Pesa offered for swift and cheap money transfers and retail purchases. South Africa already had other mobile banking applications and a number of these banking applications were provided by local banks. M-Pesa was not the resounding success in South Africa that it was in Kenya—it was taken up by just 100,000 users by May 2011. However, unlike in Kenya, there were only a few agents distributed around the country and its financial partner, Nedbank, has historically been the retail bank focusing on urban areas and did therefore not have the branch network to support the penetration of M-Pesa in remote rural areas.

The main reasons for the lacklustre appetite in the South African market for the M-Pesa opportunity were varied. In the first instance, cheap accessible channels existed to transfer money. The largest retailer in South Africa, Shoprite, has a facility in place whereby customers can deposit money for a small fee of R9.99 at any Shoprite outlet (of which there are more than 900 outlets in South Africa and 294 corporate and 39 franchise stores outside South Africa in 14 African countries) to any branch in the country, where the recipient can make withdrawals upon payment of purchases, or simply use it to purchase consumer goods from the outlet. Furthermore, a preference for cash remained high amongst those persons wanting to transfer money. A survey in 2014 on persons sending or receiving remittance transfers to or from family and friends within South Africa, showed that 32 % sent cash with a relative or friend.²¹ The regulatory rigidity in South Africa also contributed to the sluggish uptake of M-Pesa. The South African Reserve Bank does not implement a special dispensation for non-bank or e-money providers. This is the reason why mobile money providers in South Africa partner with banks, which is the strategic opposite of the experience in the other African markets. These mobile money providers are treated as banks and must comply fully with all the requirements associated with banks—such as customer identifica-

²¹ Robb Genna, “Why mobile money flopped in South Africa”, *Tech Central*, July 17, 2015, <http://www.techcentral.co.za/why-mobile-money-has-flopped-in-sa/58282/>, accessed December 15, 2015.

tion by means of face-to-face identity verification and proof of residence. In Tanzania, regulatory accommodation was different to that of formal banks, and was the key to the success after the initial service delivery adjustments were made by Vodacom. In all of the other African jurisdictions the regulatory accommodation of mobile money providers outside the formal banking system has encouraged competition, pushed costs down and stimulated the growth in mobile money usage. In his explanation for the disappointing performance of M-Pesa, the CEO of Vodacom South Africa stated in May 2011 that the banking sector in that area is much more developed, thus alluding to the nature and regulatory context of banking in South Africa as the most convincing reason for the development.²² The reliance on Nedbank was also an error of judgement, since Nedbank had little penetration amongst the lower-income groups in rural areas and no attempt was made to put in place the type of widespread and informal infrastructure it had in Kenya.

The implementation of M-Pesa was suspended but re-launched in June 2011. A much expanded distribution network of agents in remote areas where people live and work was introduced. The South African Reserve Bank did not relax the regulatory requirements. This time people of a higher Living Standards Measure (LSM) were targeted, but only 1.6 million users were reported despite the low transaction fee of R10 per transaction. Vodacom was again forced to rethink and redesigned the product once again. The new M-Pesa in South Africa was launched for a second time on 31 July, 2014, with Bidvest as a partner. This time new features were added to the product: a chip and pin-protected Visa card was added to the service; a voucher system was added to upload cash and convert cash to M-Pesa, similar to buying airtime, at all Vodacom shops, selected Spaza shops and retailers; access was significantly expanded to 27,000 ATMs and over 240,000 merchant outlets in South Africa; person-to-person transfers were introduced and customers were promised that additional functionality would be added in the near future; and finally usage rewards were introduced. These included airtime and other offers, for example a doubling of airtime when purchasing airtime via M-Pesa and

²² Vodacom Group Limited, Interim Results for the six months ended 30 September 2015, accessed January 2, 2016, www.vodacom.co.za.

free airtime for activating the M-Pesa Visa card.²³ Vodacom was hoping to emulate the success it had with the product in Tanzania; however, by the end of September 2015 Vodacom Group stated that 1.2 million customers were added to the service since the second relaunch in 2014 and 1.3 million customers were active in the system.

Market commentators remain sceptical about the possibility of the South African M-Pesa project ever posting the impressive successes of East Africa markets.²⁴ The reality of the attempts to duplicate a successful service from other African locations in South Africa is that it failed. With a population in excess of 45 million people, the message is that 'one size does not fit all'. The financial environment in South Africa is well established and is securely entrenched in a regulatory framework maturing since the establishment of the first central bank in Africa, the South African Reserve Bank (SARB) in 1923. A sophisticated financial services sector is subject to regulatory oversight, which contributed to the relative superficial impact of the GFC on South Africa. The South African Reserve Bank is not prone to relax these requirements in the light of the concerted effort to curb criminal activities related to money laundering.²⁵

The well-entrenched retail banks have succeeded in introducing many entry-level services to the unbanked sector, whereby many of the needs of the unbanked had been addressed in a different way than in other African markets with much leaner financial services networks or less sophisticated service provision. The FNB 'e-wallet' allows anyone with a valid South African mobile phone to send and receive money. The Shoprite countrywide money transfer service at a fraction of the cost of formal bank transfers has also entered the market served by the M-Pesa product in Kenya and Tanzania. A more convincing argument explaining the less than optimal success of M-Pesa in South Africa is that Vodacom changed the marketing angle every time the service was relaunched in

²³ Goldstuck Arthur, "Vodacom re-launches M-Pesa again". *Mail & Guardian*, August 4, 2014, accessed August 4, 2014, <http://mg.co.za/article/2014-08-04-vodacom-re-launches-m-pesa-again>.

²⁴ Tarrant Hilton, "M-Pesa's a bigger flop in SA than Vodacom's letting on". *Moneyweb*, July 30, 2015, accessed July 30, 2015, <http://www.moneyweb.co.za/moneyweb-opinion/m-pesas-a-bigger-flop-in-sa-than-vodacoms-letting-on/>.

²⁵ South African Reserve Bank (SARB), 2013 Annual report, accessed July 4, 2014, <https://www.resbank.co.za/Lists/News%20and%20Publications/Attachments/5795/Annual%20Report%202013.pdf>.

South Africa, without identifying explicitly what M-Pesa was in South Africa. At the first introduction of the service it was marketed as a mobile money solution, then in 2011 as a mobile money wallet allowing the user to store money safely, and in 2014 it was advertised as a platform to swipe and buy with a Visa card linked to the mobile phone.²⁶ The message was mixed and created confusion.

Vodacom faces competition in the mobile market with FNB, MTN, Standard Bank, and Net 1 launching or relaunching the products in recent months. In August 2014, MTN partnered with Centenary Bank in Uganda to allow their Mobile Money Customers to withdraw cash from any of Centenary Bank's ATMs across the country. Additionally, MTN launched Mobile Money in South Africa in 2012, and after receiving regulatory approval in March 2014, is able to offer a fully accessible bank account on a mobile device. Moreover, customers are able to use the Mobile Money Visa card at ATMs and till points to pay various electronic bills and earn customer loyalty points at Pick n Pay stores. However, again the M-Pesa relaunch by Vodacom failed to obtain significant number of subscribers with only 1.3 million subscribers by the end of March 2015. The success of the MTN mobile money initiative with Pick n Pay is perhaps due to the fact that the retailer is not a bank in South Africa—where the bank charges are notoriously expensive—and has a mass customer base in ordinary consumer goods and food.²⁷

Developments in Other Regions in Africa

The M-Pesa advantage as first mover in the market will most probably be difficult to match, but the growth in demand on the continent and the overall competitive environment contributed to the explosion in the

²⁶Tshabalala Sibusiso, "Why South Africa's largest mobile network, Vodacom, failed to grow M-Pesa", *Quartz Africa*, August 3, 2015, accessed August 4, 2015, <http://qz.com/467887/why-south-africas-largest-mobile-network-vodacom-failed-to-grow-mpesa/>.

²⁷McLeod Duncan, "Vodacom's M-Pesa relaunch is a flop". *Tech Central*, May 18, 2015, accessed May 19, 2015, <http://techcentral.co.za/vodacom-m-pesa-relaunch-is-a-flop/56717/>.

industry. The successful expansion in Tanzania, where figures released by Vodacom in September 2014 show transactions to the value of \$1.2 billion per month through M-Pesa (a figure that equals a third of Tanzania's GDP), is testimony to the future of mobile money transactions in SSA.²⁸ The growth in the Tanzanian market occurred because of the very limited banking services networks in the country. This is a direct outcome of the total nationalisation of the Tanzanian economy under President Julius Nyerere, who introduced the so-called *African socialism* after independence in the 1960s.²⁹ After the era of the 'Mwalimu' (Swahili for 'teacher'—an honorary title given to him as leader of the liberation struggle against colonialism), which came to an end with his retirement in 1985 and passing away in 1999, Tanzania joined many African nations in embracing aspects of market liberalisation. Where formal banking institutions had established themselves in other East African states before decolonisation and continued operations after independence, this development was abruptly terminated in Tanzania. As Tanzania emerged into the new world of entrepreneurial opportunity and personal earnings, the predominantly rural population developed the demand for money transfers. While cash remained the medium of choice, logistics mitigated against it. Vodacom partnered with M-Pesa to fill the gap, but the Tanzanian market is an open competitive market with Tigo and Airtel competing mobile service providers. The expansion in the market is primarily ascribed to the large number of agents supporting all three service providers. In 2013 there were approximately 20,000 M-Pesa agents, but by 2014 this number rose to 73,000 – and around 2500 agents added per month. This verifies the extent to which the Tanzanian society has embraced the liberal market and justifies the doubling of Vodacom's network in recent times. Vodacom first closed the 2G gap and then moved to become the market leader in 3G service provision in Tanzania. M-Pesa complemented these efforts by securing interconnections with Tanzanian banks, which gave Vodacom access to both the banked and the unbanked

²⁸De Vos Dirk "Why mobile money is so tough to crack", *Tech Central*, November 11, 2014, accessed November 12, 2014, <http://techcentral.co.za/why-mobile-money-is-so-tough-to-vrack/52418/>.

²⁹Austen A. Ralph, *African economic history: internal development and external dependency*, (London: J. Currey, 1987).

sector in the country. Even though M-Pesa was first used to transfer money between family and friends, as had been the case in Kenya, it developed into a business tool allowing customers the facility to pay for services, such as utilities (water and electricity). Merchant payment solutions were added to enable retailers to receive payment directly from an M-Pesa account. M-Pesa emerged as an entrepreneurial opportunity—agents earn commission from transactions—withdrawals are at a cost, but not deposits. Agents conducting 1300 commissions per month can earn up to \$350.³⁰

The developments in Ghana are following the trend. The official unbanked segment of the population is 70 %, but the rapid growth in the mobile money industry resulted in the number of registered mobile money customers leaping from 3,303,837 in 2013 to 5,424,650 in 2014, an increase of 64 %. This is about 17 % of the Ghanaian population. The Bank of Ghana recorded a massive rise in the number of subscribers from 20,346,016 in 2013 to 21,721,814 in 2014. The value of transactions are equally impressive—from GCc 2.4 billion (measured in Ghanaian Cedi) in 2013 to GCc 11.6 billion in 2014, which amounted to approximately a third of the 28 banks in Ghana's total deposit liabilities. The government passed new mobile money regulations in July 2015, which streamlined transaction flows, and enabled collaboration between the mobile money industry and the banking system and the Bank of Ghana. Competition is also tough in the market, with four mobile telecommunication companies operating in the market—Airtel, MTN, Tigo, Vodafone. Just over 60 % of mobile money users in Ghana live in urban areas and only 19 % of them live on less than \$2.50 a day. In November 2015 Vodafone extended M-Pesa to Ghana, adding Ghana as the eleventh market in which M-Pesa was offered. MTN is the largest mobile operator in Ghana and announced in November 2014 that it was processing about 25 million transactions in excess of GCc 3 billion per month. The industry is active in developing innovative products in mobile money services to reach to those outside the system and to address specific needs of the rural communities. In March 2015 Airtel announced the establishment of an innovative plat-

³⁰ Van der Bergh, R (2014) 'M-Pesa: Vodacom's money spinner in Tanzania' 29 September 2014. <http://techcentral.co.za/m-pesa-vodacom-s-money-spinner-in-Tanzania/51290/>

form in collaboration with Zeepay (a mobile financial services aggregator) to enable members of farming-based organisations to register on the platform and buy agro-inputs (such as chemicals, from suppliers registered on the platform) on credit, as well as access credit to do farm improvements. The programme is known as *Akuafo Nkosuo* and was piloted in the Ashanti region. Another mobile service provider Tigo partnered with BIMA, a micro insurance company to introduce fertiliser-imbued insurance for farmers. These developments are remarkable, given the findings of a study by Vivian Dzokoto in 2013 indicating a resounding preference for cash and deep mistrust of mobile money in Ghanaian society.³¹ A factor that affects the industry adversely though, is the high levels of taxation of industry in Ghana. Taxes account for almost 25 % of the cost of mobile ownership and the \$650 million the mobile operators pay in taxes annually, constitutes about 40 % of total revenue in the sector.³²

In Uganda the communication sector is one of the fastest growing sectors in the economy. The sector was opened to competition in 2007, currently allowing four operators (MTN Uganda, Orange Uganda, Uganda Telecom Limited and Warid Telecom). MTN is the dominant industry player controlling 41 % of the market, but there is tough competition with the other operators. The main operators in the mobile money industry in Uganda are MTN Uganda, in partnership with Standard Bank, M-Sente from UTL, in partnership with DFCU, and ZAP from Zaire in partnership with Standard Charter Bank.³³ In 2013 Orange Money also entered the competitive market. There is no legislation governing money services in Uganda, neither legal provision for third parties to deliver financial services of permission to non-banks and to issue mobile money without being subject to the full range of prudential regulations applied

³¹ Dzokot Vivian Af, "Making sense of mobile money in urban Ghana: Personal, business, social and financial inclusion prospects", IMTFI, accessed November 18, 2015, <http://blog.imtfi.uci.edu/2013/09/making-sense-of-mobile-money-in-urban.html>.

³² Groupe Speciale Mobile Alliance (GSMA) *The mobile Economy. Sub-Saharan Africa 2015*. London.

³³ Ndiwalana Ali, Morawczynski Olga, and Popov Oliver (2012) "Mobile money in Uganda: A preliminary study", accessed July 14, 2014, <http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2012/03/m4dmobilemoney.pdf>.

to banks.³⁴ The Bank of Uganda found an innovative route around these limitations by requesting mobile money operators to enter into partnerships with banks that had to apply to the Bank of Uganda for a ‘letter of no objection’ to supply mobile money services. The Bank of Uganda aimed at protecting the value of the mobile transaction through the regulation of financial institutions.³⁵ By 2015 the statutory position had not changed in Uganda, which left the Bank of Uganda no alternative but to issue ‘guidelines’ to provide greater clarity to the mobile money industry. This regulatory context shows some similarity to the South African situation, but was different from Kenya, where the government refrained from linking the regulation of the banking system with the mobile money industry. The mobile market was nevertheless growing—50 % of mobile phone owners made or received regular payments using their phones. By the end of 2013, mobile money transfers hit the Uganda Shilling 1.6 trillion (around \$640 million) level.³⁶ Half of the registered mobile money users stored money on their m-accounts, but limited service innovation occurred in that market. Agents were predominantly doing cash-in cash-out transactions and other bank-related services such as bill payments and airtime top-ups. Saving, credit and insurance transactions were almost non-existent.³⁷ Recently operators in the mobile market have experienced declining revenue as a result of the competition in the market. This has led to the marketing of additional revenue streams, such as mobile data, 3G broadband services and mobile money services. Uganda is currently one of the fastest growing mobile money markets in SSA

³⁴ Staschen Stefan, “Mobile money moves forward in Uganda despite legal hurdles”, *CGAP*, March 9, 2015, accessed March 10, 2015, <http://www.cgap.org/blog/mobile-money-moves-forward-Uganda-despite-legal-hurdles>.

³⁵ Ssonko George Wilson, (2010) “The role of mobile money services in enhancing financial inclusion in Uganda”, Bank of Uganda, accessed May 12, 2013. https://www.bou.or.ug/bou/bou-downloads/research/BouWorkingPapers/2010/Aug/THE_ROLE_OF_MOBILE_MONEY_SERVICES_IN_ENHANCING_FINANCIAL_INCLUSION_IN_UGANDA_BOUWP0810.pdf.

³⁶ Tredger Chris, “Moves to regulate Uganda’s bustling mobile money market”, *IT News Africa*, January 13, 2014, accessed January 15, 2014, <http://www.itnewsafrika.com/2014/01/moves-to-regualte-ugandas-bustling-money-market>.

³⁷ Lee Annabel, “The future of Uganda’s mobile market: Why agent networks are key to growing the sector”, *Next Billion*, March 21, 2014, accessed March 22, 2014, <http://nextbillion.net/the-future-of-ugandas-mobile-market>.

because of it being the country with the third largest registered mobile money accounts per 1000 adults in 2014 in SSA, namely 762.

Remittances in Africa

The rural poor and those living in remote areas in Africa, have limited or no access to formal banking services and thus have to use informal channels to make payment remittances. Also, the costs of sending remittances in Africa are very high.

There are many reasons for the high transaction costs in Africa, but a key reason is the underdeveloped financial and payment infrastructure. The limited use of formal financial infrastructure impacts directly on the transparency in the market. Without access to formal financial infrastructure there is a greater risk that the remittance sender is not informed of the speed of the service and importantly, of all the components of the transaction cost (exchange rate used, fees charged, any taxes imposed and any charges imposed on the recipient). This lack of transparency makes it difficult for users of remittances to compare the costs and services of various remittance providers adequately when selecting a remittance provider. This information is also necessary to strengthen competition and in so doing reduce the costs.

Competition in the market is further hampered by the dominance of two money transfer operators (MTOs), namely Western Union and MoneyGram that control the market and thus can impose their own high tariffs. This has resulted in the continued high tariffs imposed on remittances and the continued use of informal channels. However, the use of informal channels, usually transporting physical cash through friends or relatives who are travelling home on public transport, is also costly, slow and inefficient resulting in time delays and exposes the additional risk of theft. The other main remittance source providers (RSPs) are financial institutions. Nevertheless, the most expensive RSPs for sending money in Africa, and in fact worldwide, are commercial banks.

The total average cost of remittances is lower in densely populated regions of the world with better developed extensive formal banking systems. The average cost of sending \$200 (or local equivalent) amounted to 10.64 %

for commercial banks, followed by MTOs at 6.51 % and the post office at 6.04 %.³⁸ Total average cost of remittances in SSA is about one third higher than the global average. This lack of formal banking service infrastructure stimulated the mobile money transfer industry, which has developed into the fastest growing avenue of money transfers in Africa. As indicated by the growth in mobile phone transfers between June 2014 and February 2015 between Côte d'Ivoire and Burkina Faso, the mobile banking environment swiftly moved to supply in the market demand for banking services to the people in remote rural areas of the continent.

Part of the reason for the high remittance fees associated with banks is the higher overhead costs. Commercial banks, unlike MTOs, typically have higher overheads due to the number of bank branches, the provision and maintenance of automated teller machines (ATM) networks and the costs associated with ensuring compliance with a number of regulations (including bank specific regulations and capital adequacy requirements).

Within the African region, Sub-Saharan Africa (SSA) is the most expensive region for remittances. This is especially important as SSA has the highest number of domestic remittances in Africa with 48 % of people reported to have sent or received domestic remittances in the previous year, according to the latest Global Findex Database 2014.³⁹

The Global Findex was launched by the World Bank in 2011 and provides comparable information from 148 countries concerning how people save, borrow, make payments and manage risk. Mobile banking allows consumers easy access to financial services in their local area and facilitates access of households to the formal banking sector, thereby providing greater financial inclusion. In Kenya there is now a 75 % account penetration and 58 % of the population surveyed had a mobile money account. Kenya is now the leader in Africa with respect to financial inclusion mainly because of the successful use of mobile banking, with 75 %

³⁸ Demirguc-Kunt Asli, Klapper Leora, Singer Dorothe and Van Oudheusden Peter, *The Global Findex Database 2014: Measuring Financial Inclusion around the World*. V. 7255. (Policy Research Working Papers, The World Bank, 2015).

³⁹ Ibid.

of the population (aged 15 years or older) having a bank account. This is a remarkable feat considering that in the 2012 Global Findex report, only 42 % of adults in Kenya had a bank account. The visible impact of the innovations in payment and banking technologies on financial inclusion is clear as 63 % of adults in the poorest of 40 % of Kenyan households, now have a bank account. This figure was only 19 % when the first Global Findex survey was conducted.⁴⁰

The Global Findex data has shown that the account penetration has dramatically improved from 2011–2014 with a 20 % drop in unbanked individuals and with 700 million additional bank account holders. The Global Findex report attributes this significant change to a 13 % improvement in account penetration in developing economies and due to the innovations in technologies, in particular mobile money, that expanded financial inclusion in SSA.⁴¹

East Africa is leading the way with mobile money adoption. In Kenya 58 % of the adult population have a mobile money account followed by Somalia, Tanzania and Uganda, which all have 35 % of the adult population with a mobile money account.⁴²

The most important development that has given the mobile money industry massive growth potential is the introduction of network collaboration resulting in interoperability. This means that customers are allowed to transact across different mobile networks as well as across the borders of different countries. In April 2014 MTN Côte d'Ivoire and Airtel Burkina Faso entered into an agreement for interoperation in mobile money services. In a similar fashion Orange Côte d'Ivoire and Airtel Burkina Faso contracted in March 2015 to engage in similar collaboration. MTN entered into an agreement with M-Pesa customers in Tanzania, the DRC, Mozambique and Kenya and MTN Mobile Money users in Uganda, Rwanda and Zambia established the first mobile money corridor in SSA allowing customers to transact across networks and countries. In May 2015 Vodafone M-Pesa and MTN Mobile Money agreed

⁴⁰Ibid.

⁴¹Ibid.

⁴²Ibid.

to allow customers the freedom to transfer funds between the two services. The development is a very strong incentive to bring more customers into the mobile money industry and to enhance financial inclusion. Similar developments manifested in West Africa, where Orange operates an international money transfer service linking Côte d'Ivoire, Mali and Senegal. This facility quickly gained traction resulting in Orange money remittances to the value of nearly one-fifth of World Bank reported remittances between those countries.⁴³ These developments are significant in illustrating the strength of the growing mobile money industry in countering former cultural distrust and scepticism about security, since customers actually see money being remitted and recipients benefitting from the transfer of funds.

Conclusion

The successes and failures of mobile money payments systems have highlighted the lessons to be learnt. This raises the question, why have other countries in Africa not been able to successfully implement mobile banking on a wide scale as evidenced in East Africa? In most of the African countries the serious deficiencies of financial exclusion of the majority of the population presented the most fertile ground for the take-up of mobile money services. The exception is South Africa, where the sophisticated financial service sector complemented by an equally sophisticated regulatory system, poised two different interest groups against each other—formal banks with a high cost structure versus e-money service providers operating through digital networks and much less costly infrastructure. In order to ensure the success of mobile money adoption, network externalities must be established by attracting as many consumers and merchants as possible and by providing the convenience and efficiencies of other card payment methods. It is also key that financial institutions have strong relationships with merchants to ensure sufficient acceptance points for market penetration. In some African markets

⁴³ Donnelly Lynley, "Mobile money is on the move". *Mail & Guardian*, May 8, 2015, accessed May 17, 2015, <http://mg.co.za/article/2015-05-07-mobile-money-is-on-the-move>.

the involvement of major banks was required by statutory regulation to facilitate m-payments. In some markets this link was functional to the growth in the market, but in other markets the experience was different. In Kenya the lack of formal banking involvement in the market contributed to the innovative and dynamic development of the industry, while in Uganda and South Africa such links proved less than optimal. The absence of a well-developed formal banking services sector in Tanzania indeed hampered financial inclusion, but once mobile telecommunication companies entered the mobile money industry, financial inclusion was achieved more efficiently.

The higher the mobile money market penetration the more likely that transaction costs will be kept low. Barriers to the success of mobile technologies, amongst others, are security concerns relating to loss of data and a personal information, and a reluctance of customers to adopt new technologies. This reluctance to engage with mobile money technology has a strong cultural and tradition-based foundation and has been observed to inhibit the initial decision to enter the industry. A preference for cash, which is still a reality in the world as two-thirds of the global population still shuns m-banking, is gradually decreasing as the population is becoming educated in the use of mobile technology and is experiencing success with mobile transactions. The interesting observation is that more people in emerging markets (25 %) as opposed to respondents in developed markets (16 %) indicated in a recent global survey that they will be using mobile financial services in the near future—these include mobile services for savings, loans, insurance and payments solutions for medical purposes, education and more.⁴⁴

To stimulate the acceptance of the mobile payment system, a widespread network of agents across the country should be established in order to exchange e-cash for cash and vice versa as with the M-Pesa system. In African countries where a dispersed agent network was offered, mobile money services struggled to establish themselves, as vast distances between customer and agent inhibited frequent usage. Additionally, the mobile payment technology should be used across mobile networks and

⁴⁴ CXOtoday.com (2015) “Two-thirds of global population shun M-banking”, September 30, 2015, accessed October 5, 2015, <http://www.cxotoday.com/story/two-thirds-of-global-population-dont-use-mobile-banking/>.

should allow payments to be made to non-users. Another critical success factor is the expansion of the mobile network. There is also a need for a cohesive set of technology standards that both customers and merchants can rely on. An integrated, universal set of standards will allow for the widespread use of m-payments and cross border acceptance. Policies promoting competition in the telecommunications sector have resulted in innovative new technologies and allowed for the realisation of the associated cost savings.

Regulatory systems developed for a sophisticated financial services sector or regulatory systems not providing for the delivery of financial services by any other agent than a formally registered bank, have proven to be dampening the development of mobile money services. In the case of South Africa, growing criminal activities involving money laundering have contributed to the reluctance on the side of the South African Reserve Bank (SARB) to relax security identification requirements. The phenomenon of illegal immigrants seeking access to the South African market, has also contributed to the unrelenting approach of the South African central bank with respect to Fica (Financial Intelligence Centre Act) requirements for all money related services—be that entering into a mobile phone contract, or using any service of a financial nature. Innovative security regulation is required to enhance the e-money services and include those still outside the South African banking system into the broader financial services sector.

The social development benefits of broad utilisation of mobile money have been established. Mobile money enhances access to venture capital, it empowers entrepreneurs, it facilitates education and medical service delivery, it oils the wheels of enterprise, it makes transport services more easily accessible and secure and it enables the transfer of money to those outside the employment network. The mobile money industry has limitless growth opportunities in Africa, since it can provide the services needed more timeously, extensively and affordably than an industry dependent on costly fixed cost infrastructure.

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