WORKING PAPER

Banking in the M-PESA Age

Lessons from Kenya

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When Safaricom's mobile money service M-PESA launched in 2007, it immediately became popular and dramatically increased Kenyans' access to financial services. Due in part to M-PESA's success, financial inclusion among Kenyans grew from 27 percent in 2006 to over 75 percent in 2016 (CBK, KNBS, and FSD Kenya 2016).[1] M-PESA drove customers' use of mobile phones to send, receive, and store money. By 2015, 60 percent of mobile money users maintained value on their accounts, one in five regularly used the account to pay for goods and services, and a slightly larger number used it to support a business. The dramatic change in the way customers and businesses manage money across Kenya caught the attention of countries around the world.

The narrative around Kenya's success continues to focus on mobile money, and with good reason. Before M-PESA and the inroads it made for mobile money, inclusion numbers saw only modest growth. In 2006, only 27 percent of the population had access to some type of formal financial services, 32 percent relied on informal services, and over 40 percent was fully excluded (FSD Kenya, CBK, and KNBS 2015). By 2016, increased use of mobile money led to 75 percent of the population having access to formal financial services, only 7 percent relied on informal services, and only 17 percent was fully excluded (CBK, KNBS, and FSD Kenya 2016).

A large portion of mobile money customers was made up of those who had been unbanked. Even so, a common assumption is that some degree of mobile money's success came at the expense of Kenya's banking sector. The year-over-year growth rate for total bank accounts declined in all but one year between 2006 and 2012, which implied that mobile money had, if nothing else, dampened the rate of banks' expansion (CBK n.d.). However, the growth of the use of mobile money was only one factor. Other factors, such as decreased marginal returns in obtaining new customers in increasingly rural areas, also played a role.

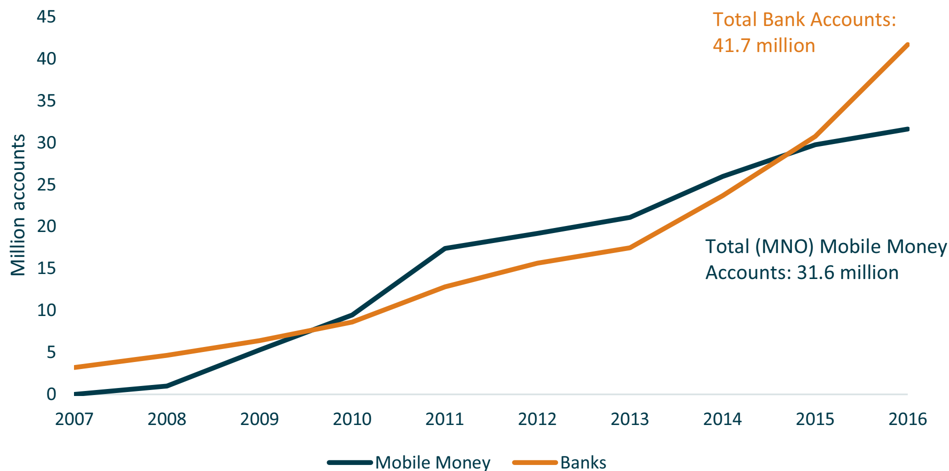
By 2009, the number of mobile money accounts in Kenya had indeed surpassed the number of traditional bank accounts (Figure 1). It is less well known that by 2014 a second inflection point had occurred: the number of bank accounts once again surpassed the number of mobile money accounts.

Mobile money fundamentally changed Kenya's financial services sector—and not at the expense of the traditional banking industry. It offers customers a radically different value proposition and, despite initial strenuous objections by banks (see Box 1), it has enabled these banks to reach a wider market. Various powerful experiences led to this development: for example, Equity Bank obtained a mobile virtual network operator (MVNO) license to compete directly against Safaricom, and Commercial Bank of Africa (CBA) partnered with Safaricom to create M-Shwari, which has catapulted CBA from a small, up-market bank to one that serves more clients than any other bank in the country.

This Working Paper explores three approaches banks in Kenya have used to respond to mobile money. Each approach demonstrates that, while nonbank mobile financial services can fundamentally reshape the financial

1 Financially included is defined as registration for a formal financial services product (e.g., bank, mobile money account, microfinance institution).

FIGURE 1. Total accounts of Kenyan banks and mobile network operators, 2006–2015



Note: Accounts are defined as an individual client relationship with a bank, taken at the institution know-your-customer level. Banks include fully licensed banking institutions, as well as microfinance institutions (MFIs) licensed to hold deposits. Mobile money providers are those institutions with mobile deployments, other than banks and MFIs (e.g., mobile network operators). Source data for bank and MFI reporting are from annual CBK supervision reports. Mobile money statistics draw on data from CBK quarterly statistical bulletins, Communications Authority of Kenya quarterly reports, and provider financial reporting.

sector in a developing market, as they have clearly done in Kenya, mobile services need not represent an existential threat to the traditional banking industry. In fact, the reach of models such as M-PESA can enable and even incentivize innovation in the banking sector. The new products created by Kenya's banks in the wake of M-PESA have driven change in banks' business models, including a shift in focus to increasingly lower income consumers.

The bank responses include the following:

- Direct competition over a mobile channel, such as through Equity Bank's mobile product Equitel.

BOX 1. Setting the scene: The banking industry's rocky relationship with M-PESA

In 2007, Kenya's financial services industry was stable, but small and inefficient (approximately 40 banks held a customer deposit base of US$7 billion sitting in about 5 million accounts). The financial sector avoided the largest impacts of the global financial crisis, but expectations for growth were modest. There were only one-and-a-half bank branches and one ATM for every 100,000 people (AFI 2010). Commercial banks were closing their rural branches because they were too expensive to operate (Muthiora 2015).

Soon after M-PESA was introduced, Kenya's banks publicly objected. They argued that Safaricom was operating as a bank without the required banking license. The Minister of Finance ordered the National Treasury and the Central Bank to conduct an audit of M-PESA. In January 2009, the Treasury issued a statement on the audit and re-asserted that mobile money was not a banking service but a retail money transfer service that had passed both an external information systems audit and internal legal and risk assessments by the Central Bank. This put to rest questions about the legality of mobile money.

- Collaboration with mobile money providers to offer banking services, such as through CBA's M-Shwari.
- Industry coordination to create alternatives to existing mobile money products, such as the small-dollar interoperability scheme introduced by the Kenya Banker's Association (KBA).

Direct competition: Equity Bank leverages mobile as a channel

At the time of M-PESA's launch, Equity Bank was the largest retail bank in Kenya, serving half of all banked Kenyans. The bank focused on swift, standardized service for all customers and developed an innovative range of savings, credit, and insurance products for the mass market. Equity started using alternative delivery channels as early as 2004, when it dispatched mobile banking vans to villages and rapidly expanded its ATM network. This focus on channels to reach lower-income segments gave Equity a first-mover advantage in areas that were ignored by retail banks.

Equity Bank was the most prominent challenger to M-PESA from the beginning. It accused the Central Bank of giving favorable treatment to Safaricom, especially by allowing mobile network operators (MNOs) to offer financial products through agents while banks were not allowed to offer banking services through agents. By 2010, the Central Bank permitted agency banking, and Equity immediately rolled out an ambitious agent network.

In March 2010, Equity and Safaricom surprised many by partnering to launch a mobile product called M-Kesho. M-Kesho would allow Equity Bank customers to link their bank account with their M-PESA account and was supposed to offer credit and insurance products along with savings. M-Kesho was jointly branded and marketed—with much fanfare—as an "M-PESA Equity account." Despite the hype, M-Kesho was not widely promoted after the launch. Industry speculation was that the partnership fell apart over issues of control and the business model, and soon the two giants were battling once again.

In 2014, Equity Bank announced it had received a license to become an MVNO. MVNOs license bandwidth on the communications infrastructure of existing MNOs (in this case, Airtel) to provide services. In explaining the decision, John Staley, then director of finance, technology and innovation, at Equity Bank, mentioned three crucial reasons for the move (1) security—improved control over the security of transactions traveling over an operator's network, (2) price—increased freedom to set a fair price for financial services running over the mobile channel, and (3) customer experience—improved ability to customize the mobile products Equity offered. Staley summed up Equity's perspective this way:

> "Banks shouldn't have to become telcos in order to deepen their mobile banking offer. But if banking, telecoms and competition authorities do not address the fact that increasingly telcos are an essential-component supplier as well as a competitor to banks—a clear conflict—the choice for banks will be stark: sit out the mobile money revolution until such time that everyone has smartphones, or else join the telco club and get on with the job of financially including people" (Mas and Staley 2014).

At this point, Safaricom protested. It objected to Equity's proposed "thin SIM," a technology that overlays on SIM cards to allow users to access two different networks from the same single-SIM device. The technology was not essential to the MVNO model, but it eliminated the need for swapping SIMs in these

devices. Safaricom notified the telecoms regulator, Communication Authority of Kenya, that thin SIMs had the ability to steal data, including personal identity numbers, from the main SIM. However, Kenya's high court allowed Equity to proceed with a one-year pilot.

Equity Bank launched Equitel by providing free SIMs to Equity customers. Tapping into an existing customer base—already 8.4 million strong in 2014—allowed Equity to quickly gain the network effects needed for a mobile money platform to succeed. By the end of 2016, the Communications Authority of Kenya reported over 1 million registered Equitel users, a user base just under 5 percent of the total market, with transactions accounting for 20 percent of the market (CA Kenya 2017).[2] The disproportionately high level of product use by Equitel's customers is partially explained by the fact that funds transfers to other Equitel users are free, making in-network transactions a more attractive option than they are on M-PESA, which charges senders for all transactions of more than $1.

However, Equitel has not drastically expanded or otherwise changed Equity Bank's customer base. By the end of 2015, its customer base grew by 0.4 million to 8.8 million. Similar growth continued through the end of 2016, demonstrating growth in the number of accounts marginally less than historical averages. Equity's average deposit balance increased over this time, seeming to support the idea that, rather than offering access to a wholly new low-income customer segment, Equitel was better serving its current clientele. On the other hand, Equity Bank's average deposit balance remains lower than many of its peers in the commercial banking sector.

Equitel is more likely than other commercial banking products to serve the poor—the marginal changes to Equity's customer base may be a result of Equity having already put in the effort over previous years to reach this population. Equity has remained one of the more profitable banks in Kenya throughout this time, with profit before tax and return on assets well above market averages, yet largely unchanged from historical trends since the launch of Equitel.

It is still early days for Equitel, and Equity continues to introduce new services over the channel, so the story may still be evolving. Equitel enters a market with close to 80 percent formal financial inclusion and 24 million users of a competing service: M-PESA. For markets with more competitive mobile money environments, the MVNO model could offer a more disruptive market opportunity.

Collaboration:CBA offers banking services to M-PESA customers

Although news headlines are often dominated by stories of competition, Kenyan banks have partnered with Safaricom and have benefited from M-PESA in various ways. Kenyan banks gain some benefit simply from the existence of M-PESA. Regulations require that a bank rated "strong" by the Central Bank be used to house the capital held by mobile money providers. If the funds are greater than KES 100 million in total (just under US$1 million), the funds must be diversified among four or more banks (of which at least two must be rated "strong"), and none of the banks may hold more than 25 percent of total customer funds.

Since 2011, banks have leveraged M-PESA's platform to allow customers to

2 Equitel users do not hold a separate account. Customers' store of value remains in their Equity bank account; Equitel acts as a new means of accessing the same store of value (i.e., an alternative delivery channel).

move funds between bank and mobile money accounts (i.e., "push-pull" capability). The services are often a result of direct negotiations between banks and the MNO, but can also be driven by third parties (e.g., aggregators) that maintain settlement accounts in participating businesses. Today some bank branches, including those of Equity Bank, serve as agents for M-PESA and other Kenyan mobile money providers (e.g., Airtel).

The most striking example of banks collaborating with Safaricom is the increase of digital credit and savings accounts offered via M-PESA. The largest single contribution to account growth by banks during the past five years has been M-Shwari, a savings and loan account launched in 2012, offered by CBA via M-PESA. Unlike the push-pull capability that brings added convenience to existing bank customers, M-Shwari brings traditional banking services, such as credit and interest-earning savings accounts, to millions of Kenyans previously formally included only through M-PESA.

M-Shwari is similar to its predecessor M-Kesho, but CBA is a very different partner for Safaricom. (See Box 2 for more examples of bank-MNO partnerships in Pakistan.) Before the introduction of M-Shwari, CBA was a small, up-market bank, largely unknown to the average Kenyan. It had fewer than 30 branches, and those were mostly in Nairobi. CBA had fewer than 40,000 deposit accounts, and an average deposit account balance of $20,000 (CBK n.d.). M-Shwari changed CBA's customer profile significantly. CBA's customer base now is more than 300 times the size it was before M-Shwari, and the average account balance has declined by over 99 percent (CBK n.d.).

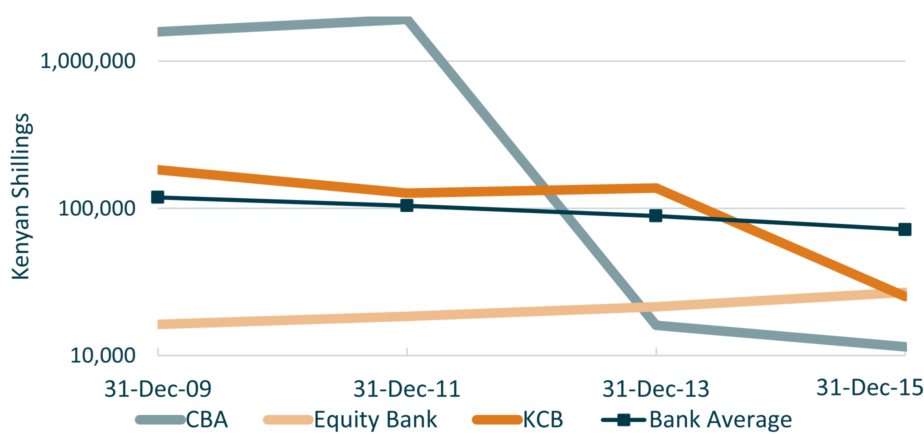
BOX 2. Partnership and scale: Is cooperation between equals possible?

The size and competitive positioning of Equity Bank and Safaricom likely contributed to the failure of M-Kesho. However, once Safaricom found a smaller banking partner, roles were more easily defined and the product (M-Shwari) gained more traction. A partnership between relative equals proved difficult, while a partnership between unequal entities succeeded.

This phenomenon is not unique to Kenya. For example, regulations in Pakistan require mobile money services to be implemented by banks, thus creating a series of partnerships between MNOs and financial institutions. The most successful of these partnerships have been between the largest MNOs (e.g., Telenor and Mobilink) and Pakistan's microfinance banks (e.g., Tameer Microfinance and Waseela Microfinance Bank), which have a comparatively small footprint relative to the country's commercial banks. Like Kenya, the roles in these arrangements between MNOs and microfinance institutions (MFIs) are clear: the MNO brings the scale and customer reach; the MFI brings the financial services expertise and the necessary regulatory credentials.

This does not mean that similarly sized organizations cannot work together. KCB, which later launched a product similar to M-Shwari with Safaricom (KCB M-PESA), is much larger than CBA. However, evidence across markets implies that roles and objectives are more easily crystallized where these differences exist.

FIGURE 2. Average account balance, Kenyan banks 2009–2015



Note: Source data were obtained from annual CBK supervision reports (2009–2015).

Figure 2 shows the changes to average deposit size before and after M-Shwari. When compared to other banks that have implemented mobile products, significant changes can be seen at some providers, such as Kenya Commercial Bank (KCB), but none has completely reinvented itself in the way CBA did.

Unlike Safaricom's earlier partnership with Equity Bank, the roles in this partnership are clear.[3] Safaricom offers CBA a broad reach to a majority of the Kenyan population, along with access to know-your-customer procedures and data that enable seamless registration and credit scoring. CBA offers the accounts, funds the loan portfolio, and conducts the credit scoring, regulatory compliance, and credit bureau reporting. CBA's role is largely operational; many M-Shwari customers do not even know that their bank account is a CBA account (Cook and McKay 2015).

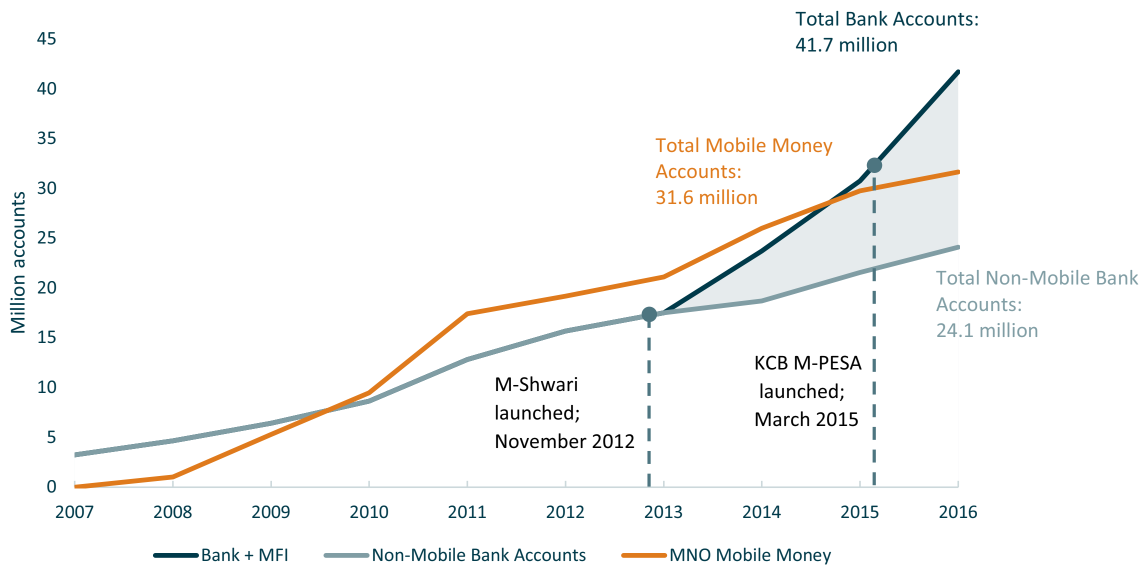
Like M-PESA, M-Shwari was immediately popular. M-Shwari is easy to use and accessible and gives customers the benefit of a bank account, including interest and insurance on deposits, as well as access to small loans. Accounts can be remotely opened instantly, and transactions between M-Shwari and M-PESA accounts are free. However, M-PESA fees are still charged for cashing out.

By July 2017, M-Shwari had expanded to 19.5 million accounts—more than the accounts of the next two largest bank competitors combined. Figure 3 demonstrates the tremendous impact M-Shwari has had on the number of bank accounts in Kenya. When M-Shwari accounts are not considered, bank-issued account growth continues to be about the same as before, averaging 10–12 percent per annum, and continuing to trail mobile money. However, broader measures of CBA's financial performance have not changed significantly. When it comes to profitability measures, such as return on assets and return on equity, CBA remains similarly positioned in the market as it did before the launch of M-Shwari.

Not surprisingly, other banks have been eager to enter the mobile money space. In 2015, KCB partnered with Safaricom on a similar product. KCB gained the same quick wins as M-Shwari—adding up to 5 million of M-PESA's customers to its KCB M-PESA product in the year of launch. Although KCB started with

3 Several publications address this topic, including Flaming et al. (2013) and Porteous (n.d.).

FIGURE 3. Total Accounts by Channel, Kenyan Banks and MNOs, 2009–2015



Note: Accounts are defined as an individual client relationship with a bank, taken at the institution KYC level. Non-mobile bank accounts are those not exclusively associated with a mobile deployment. Banks include fully licensed banking institutions, as well as MFIs licensed to hold deposits. Mobile money providers are those with institutions with mobile deployments, other than banks and MFIs (e.g., MNOs). Source data for bank and MFI reporting are from annual CBK supervision reports. Mobile money statistics draw on data from CBK quarterly statistical bulletins, Communications Authority of Kenya quarterly reports, and provider financial reporting.

a larger, lower-income customer base, the changes to average deposit balance have still been dramatic, declining by over 70 percent since launch (CBK n.d.). Again like CBA, KCB trends on metrics such as total deposits, and overall profitability remains largely unchanged since the launch of KCB M-PESA.

For years, many in the digital financial services space spoke about the mobile money "rails" that would be the foundation for a host of other value-added financial products and services. A lot of this was speculation—until products such as M-Shwari and KCB M-PESA were launched. These products have proven that mobile money can be used to bring the unbanked into the banking sector in large numbers.

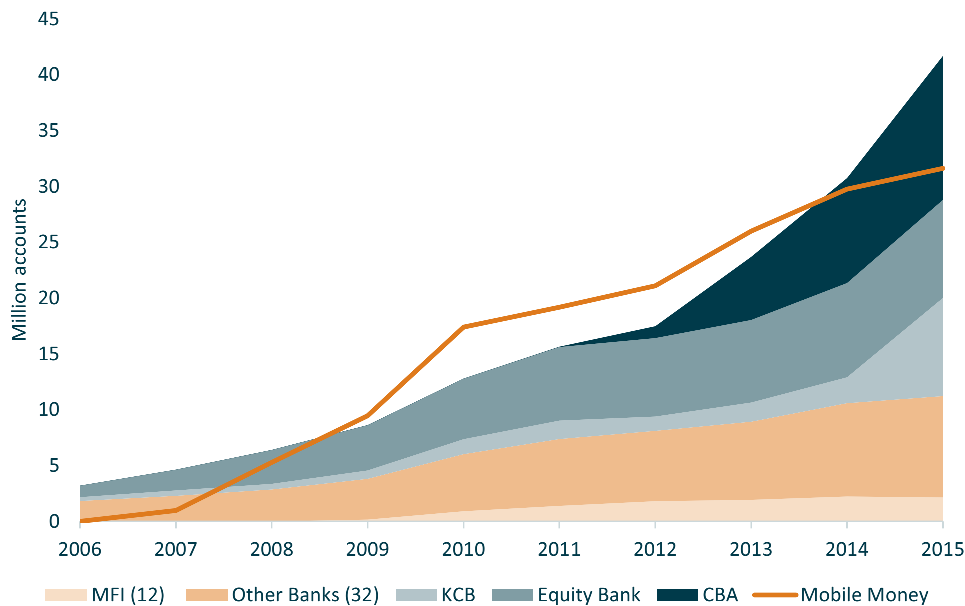
Industry coordination: PesaLink offers mobile money alternative

More recently, Kenya's banks have come together to roll out PesaLink, a real-time payments system that enables small-value transfers between institutions. The Kenya Banker's Association initially spearheaded the initiative. It created an independent entity—Integrated Payment Systems Limited (IPSL)—to manage the uniformly branded scheme and operate a payments switch that supports the transactions.

PesaLink enables customers from participating banks to exchange payments using only phone numbers, similar to the way transactions are conducted on mobile money platforms such as M-PESA. Although the switch has started with person-to-person transfers, later phases may incorporate other use cases, including bill pay and merchant payments.

As of May 2017, more than 20 banks were live with 2 million registered users (customers of participating banks who have registered their phone number to send and receive payments over PesaLink). While these registered users have access to all the benefits of PesaLink, all customers of participating

FIGURE 4. Total accounts, by institution, Kenyan banks and MNOs; 2006–2015



Note: Accounts are defined as an individual client relationship with a bank, taken at the institution KYC level. Banks include fully licensed banking institutions and MFIs licensed to hold deposits. Mobile money providers are those with institutions with mobile deployments, other than banks and MFIs (e.g., MNOs). Source data for bank and MFI reporting are from annual CBK supervision reports. Mobile money statistics draw on data from CBK quarterly statistical bulletins, Communications Authority of Kenya quarterly reports, and provider financial reporting.

banks can send, and even those who have not registered a phone number can receive if the sender inputs an account number rather than a phone number.

The technical integration between banks and IPSL has been achieved in a number of ways, including through local aggregators, such as Cellulant, and through direct connections. However, all transactions are passed through a central switch owned and operated by IPSL. The idea for the scheme was officially conceived as part of a broader effort to improve coordination between banks, but it was likely also driven by increasing competitive pressure from Safaricom (and other MNOs, such as Airtel) whose mobile money transfers had become more popular in the market than bank transfers.

Like mobile money, the transactions are high speed and intended to be low cost. Bank transactions less than $5 are free to the banks, and participating banks have agreed not to charge customers for transactions of this size. However, early indications are that the cost of transfer for larger transaction amounts is being priced closer to mobile money (or in some cases, above) at most institutions participating in the PesaLink payments scheme.

KCB and CBA are both a part of the project, though, for the time being, KCB M-PESA and CBA's M-Shwari remain limited to M-PESA for cash-in and cash-out transactions. The door has not been closed to MNO participation in the scheme. In fact, inroads to broader coordination among MNOs and banks such as the new Payments Association of Kenya are forming. However, bank ownership of IPSL/PesaLink may present a challenge when considering how the governance and business models would need to adapt to accommodate MNO participation.

Some banks have promoted PesaLink more aggressively than other banks, and

it remains to be seen how well the service will take hold: How will these banks balance competition and coordination? Will their common desire to provide a viable alternative to M-PESA overcome a long history of competition? The reach of the banking industry remains small compared to that of MNO-led mobile money products.[4] Together, participating banks have 15,000 access points compared to the over 65,000 mobile money agents in Kenya today.

In the past 10 years, M-PESA has affected many aspects of Kenya's economy and society, not least its banking sector. Mobile phones are now widely accepted as the easiest way for people to manage their money. Kenya's experience demonstrates that mobile money is not simply a blip on the radar of financial services markets and it need not pose an existential threat to retail banking. Retail banks can thrive in the face of mobile money, if they are prepared to adapt.

Banks in Kenya have discovered new ways to compete and collaborate as they adapt to an increasingly digital and mobile financial services market. For consumers, and especially the poor, these actions have helped to tear down long-standing barriers to financial access and inclusion. Banks have been as much a part of this change, especially in recent years, as have MNOs.

The story is far from over. In May 2017, Kenya's three largest mobile operators (Safaricom, Airtel, and Telkom) announced that interoperable transfers would begin in the next few months. So even as Kenya's banks come together to improve their value proposition in the market, Kenya's MNOs are doing the same. In the next 10 years, elements such as interoperability and the rise of smart phones will continue to change the financial landscape in Kenya. Both banks and MNOs will need to continue to be flexible and adapt to remain relevant to mass market customers.

REFERENCES

AFI (Alliance for Financial Inclusion). 2010. "Enabling Mobile Money Transfer: The Central Bank of Kenya's Treatment of M-PESA." Bangkok: AFI. http://www.afi-global.org/sites/default/files/publications/afi_casestudy_mpesa_en.pdf

CA Kenya (Communications Authority of Kenya). 2017. "Second Quarter Sector Statistics Report for the Financial Year 2016/2017." Kenya: CA Kenya, March. http://www.ca.go.ke/images/downloads/STATISTICS/Sector%20Statistics%20Report%20Q2%20FY%202016-17.pdf

CBK (Central Bank of Kenya), KNBS (Kenya National Bureau of Statistics), and FSD Kenya. 2016. "The 2016 FinAccess Household Survey on Financial Inclusion." Nairobi, Kenya: FSD Kenya.

CBK (Central Bank of Kenya). n.d. "Bank Supervision & Banking Sector Reports." https://www.centralbank.go.ke/reports/bank-supervision-and-banking-sector-reports/

Cook, Tamara, and Claudia McKay. 2015. "How M-Shwari Works: The Story So Far." Blog post, 2 April. http://www.cgap.org/publications/how-m-shwari-works-story-so-far

Flaming, Mark, Aiaze Mitha, Michel Hanouch, Peter Zetterli, and Greta Bull. 2013. "Partnerships in Mobile Financial Services: Factors for Success." Johannesburg: International Finance Corporation. https://www.microfinancegateway.org/sites/default/files/mfg-en-paper-partnerships-in-mobile-financial-services-factors-for-success-aug-2013.pdf

FSD Kenya, CBK (Central Bank of Kenya), and KNBS (Kenya National Bureau of Statistics). 2015. "FinAccess Household Survey, 2013." Harvard Dataverse, V2. http://dx.doi.org/10.7910/DVN/JSPE9W

4 As of 2015, see http://www.fspmaps.com/.

Mas, Ignacio, and John Staley. 2014. "Why Equity Bank Felt It Had to Become a Telco—Reluctantly." Blog post, 18 June. http://www.cgap.org/blog/why-equity-bank-felt-it-had-become-telco-%E2%80%93-reluctantly

Muthiora, Brian. 2015. "Enabling Mobile Money Policies in Kenya: Fostering a Digital Financial Revolution." London: GSMA. http://www.gsma.com/mobilefordevelopment/programme/mobile-money/enabling-mobile-money-policies-in-kenya-fostering-a-digital-financial-revolution

Porteous, David. n.d. "The Challenge of 'Co-Opetition' and Partnerships: What Makes Them Work?" Boston: Bankable Frontier Associates.