

Competition in Mobile Financial Services

Lessons from Kenya and Tanzania

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“In the end, financial exclusion occurs because there are no or few financial institutions wishing to serve the poor or sustaining enough learning and experimentation about how best to serve them. The recipe for financial inclusion ought to be, therefore, increasing competition.”—Mas (2014)



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Mobile financial services (MFS)¹ are the main drivers of financial inclusion in many developing countries; they provide low-income consumers with access to transfers, payments, and increasingly more complex products such as credit, savings, and insurance.² MFS channels can provide the advantages of convenient, secure, and cost-efficient product offerings to consumers. In several markets, MFS have in turn helped to significantly increase the portion of the population with access to formal financial services.

To promote both quality and diversity in MFS products, and in turn financial inclusion, it is important to ensure a competitive ecosystem that facilitates entry into the market, the development of innovative MFS products, and high-quality, value-for-money services. Policy makers, donors, and others promoting financial inclusion may give priority to facilitating first-movers' testing and innovating to bring products to scale and prove the viability of MFS business models during early market development, with competition issues taking a backseat. However, as MFS markets mature and become more fully integrated into the economy and consumers' financial lives, effective competition becomes increasingly important to ensuring that markets work well and to promoting financial inclusion (Box 1).

This working paper aims to provide insights on the role that effective competition and competition policy play in developing MFS, and in turn promoting financial inclusion using Kenya and Tanzania as case countries. The aim is to have two distinct, but complementary products:

1. To identify and, where appropriate, contrast the competition issues of MFS in Kenya and Tanzania. This will offer insights on how effective competition might be improved to make markets work well and, in turn, increase financial inclusion and consumer welfare.
2. Draw on the experiences of Kenya and Tanzania to highlight to policy makers and regulators in more nascent MFS markets the aspects of competition policy they may wish to monitor or investigate as their own MFS markets develop.

The primary target audiences are competition authorities and other regulatory bodies who have both the expertise and the power to effect such changes, while acknowledging that capacity constraints can often be restrictive in identifying and mitigating competition issues in MFS.³

Box 1. Competition and financial inclusion

A growing body of literature underlines the importance of effective competition in promoting financial inclusion. For example, principle two of the nine G20 Principles of Innovative Financial Inclusion that give direction on private-sector engagement states that “policy approaches that promote competition and provide market-based incentives for delivery of sustainable financial

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¹ In this publication, mobile financial services (MFS) refer to mobile money and digital platform accounts services that are primarily accessed via mobile channels and agent networks that are serving a significant portion of previously unserved and underserved financial consumers in emerging markets.

² GSMA (2014c) notes that mobile money is now available in most developing and emerging markets, with 219 mobile money services in 84 countries at the end of 2013. Indeed by the end of 2013, nine markets had more mobile money accounts than bank accounts.

³ We did not undertake an academically rigorous “competition market study,” the like of which a competition authority would devote considerable financial and human capital to conduct. The methodology for this research—conducted from July 2014 through December 2014, included comprehensive stakeholder interviews, consumer research on digital credit and savings products, a price sensitivity survey in Kenya, a review of relevant competition theory and literature, and observed best practice around the world.

access and use of a broad range of affordable services (savings, credit, payments and transfers, insurance) as well as a diversity of service providers” should be implemented.

In the MFS market, effective competition can improve financial inclusion in a number of ways:

- *Price*: Effective competition among providers drives them to operate more efficiently and price their products competitively to attract consumers. This can lead to lower costs passed on to consumers and businesses, which can make financial services more affordable to low-income, underserved populations.
- *Quality of products*: Effective competition incentivizes providers to ensure that the products they provide are high quality to retain consumers, helping adopters of products remain active users—all the more pertinent given high dormancy rates experienced by some providers of MFS.
- *Variety and diversity of products*: Effective competition also incentivizes providers to introduce new and innovative MFS products and services, which promote increased uptake and use of financial services among the poor.
- *Service*: Where consumers have increased options for products and services, service quality will be promoted as firms compete on service for fear of consumers switching providers. In MFS markets, service can impact product quality in multiple ways, including the quality of the financial product, but also the quality of the telecommunications channels and agent networks through which these services may be accessed.

I. MFS in Kenya and Tanzania

Kenya and Tanzania are two of the most successful MFS markets globally, with 26 million and 38 million active mobile money accounts (CGAP 2014), respectively, and a growing ecosystem of products, such as savings, credit, insurance, and securities, riding on the mobile money rails.

These two markets have been primarily MNO-led markets, meaning that MNOs were the first providers to bring these products to scale and continue to dominate the mobile money markets. However, there has been an increase in the role of banks and other financial service providers in MFS products in recent years. As an example, the Helix Institute of Digital Finance’s 2014 “Kenya Agent Network Accelerator Survey” reported an increase in agent network market share of banks in Kenya from 5 percent in 2013 to 15 percent in 2014, with Equity Bank alone increasing market share from 1.3 percent to 8 percent (Khan et al. 2014). There is also an emerging trend of MNO partnerships with financial service providers to offer more products and services via MFS including savings, credit, and insurance.⁴

There have been several important competition-relevant policy developments recently in both Kenya and Tanzania that highlight how maturing MFS markets can begin to establish an ecosystem that better supports free and fair competition.

⁴For example, the M-Shwari and M-Pawa offerings in Kenya and Tanzania, respectively.

- The introduction of National Payments Acts in Kenya in 2014⁵ and the soon to be enacted National Payment Systems Act in Tanzania,⁶ respectively. These Acts helped to clarify questions of regulatory jurisdiction across authorities as well as set common standards for different types of firms offering MFS (e.g., banks and MNOs).
- Issuance of mobile virtual network operator (MVNO)⁷ licenses in 2014 in Kenya that will allow new entrants to challenge MNOs by establishing their own telecommunications networks on which they can offer MFS.⁸
- Interoperability agreements among MNOs in Tanzania in 2014 and 2015 to facilitate across-network mobile money transfers.⁹
- A 2014 ruling by the Competition Authority of Kenya (CAK) put an end to agent exclusivity clauses in Kenya, allowing individual agents to serve more than one MFS provider.¹⁰
- The issuing of rules by CAK in 2015 requiring greater transparency of pricing for Lipa na M-Pesa, a mobile money-based merchant payment platform.¹¹

These developments have represented important inflection points in both markets on key competition issues for MFS and offer initial insights on how to promote effective competition in MFS markets and what role policy makers may play in this.

II. Key competition issues for MFS in Kenya and Tanzania

Box 2. Competition and consumer protection

When markets fail to work well, regulators and competition authorities often turn to competition and consumer protection policies to address these issues. While not synonymous, these two policy approaches often seek the same goal—maximizing consumer welfare. Competition and consumer protection policies can be mutually reinforcing.

Effective consumer protection policies can increase consumer trust in the market for MFS. When consumers are confident in their buying and selling decisions they are more likely to participate in a marketplace, which, in turn, generates more transactions and can bring about more entrants and stronger competition in the market (McKee, Kaffenberger, and Zimmerman 2015). Effective consumer protection policies also increase transparency and the information available to consumers, which promotes comparability and exerts further competitive pressure on providers. Furthermore, effective competition can serve consumers by incentivizing innovation in MFS, increasing product choice, and ensuring value for money products and services.

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⁵ <http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2014/08/NPSRegulationsLegalNoticeNo-2-109.pdf>

⁶ As of this writing the final version of the National Payment Systems Act and subsequent Regulation of E-Money Issuers were still to be released.

⁷ MVNO licenses allow providers (be they telecoms providers or otherwise) to purchase spectrum from a MNO to provide services to their customers. The primary utility of such a license for a financial service provider is to control its own mobile channel, which as noted in the discussion of Channel Access, can have significant cost, quality, and competition implications.

⁸ See Mulwa and Mazer (2014).

⁹ See Musa, Niehaus, and Warioba (2014).

¹⁰ See Ochieng (2014).

¹¹ See Mazer (2015).

Clearly, then, many issues of relevance to ensuring effective competition will also be important for consumer protection, and vice versa. While this paper focuses explicitly on competition, it does touch on a number of important consumer protection issues, demonstrating the close links between competition and consumer protection in mobile financial services markets.

Five key issues have been identified that might prevent, restrict, or distort competition in Kenya and/or Tanzania, and thereby diminish financial inclusion. These are as follows:

- Access to the channels through which MFS is delivered.
- Disclosure and transparency of product terms.
- Interoperability.
- Data sharing in MFS.
- Regulatory authority coordination on competition issues.

a. Access to the channel for delivering MFS

Box 3. Key messages regarding channel access for delivering MFS

- There is an inherent conflict of interest where the provider of a MFS channel competes with other MFS providers' products and services delivered via the same channel. This does not preclude the channel provider from this dual role, but does raise important competition considerations that need to be effectively managed by the relevant authorities.
- The pricing of channel access may result in providers being unable to access the relevant market(s), resulting in less effective competition. This includes "zero-rating" of channel costs (removing all charges for use of the communication channel) for partners that compete directly with other providers accessing the same channel to provide a competing service.
- Notwithstanding the above, policy makers should take an incremental approach to any actions related to channel access. The first step should be a formal inquiry into the cost of channel access across sectors to determine the effects on competition.

In the market for MFS, financial institutions are both customers of, and competitors to, MNOs. This creates a fundamental conflict because MNOs control access to the mobile network and have sufficient incentives to restrict access to competitors. The expansion of financial services via mobile phones has only increased the importance of the telecommunications channels through which MFS are delivered. It is therefore possible that an MNO could restrict access to the channels that financial institutions and other third parties depend on. There are several potential adverse consequences for competition that may arise from restrictions in channel access:

- Potential foreclosure of the market to providers competing in the same space as the MNOs, constituting a barrier to entry.

- Product range in the market may consequently be limited.
- There is limited scope for innovation by firms with potentially high-value and high-demand products and services, who cannot use prevailing access channels to serve potential customers.
- High costs may be passed through to consumers in the form of increased prices due to the cost of channel access.

In Kenya and Tanzania the dominant front-end technology used in the deployment of mobile banking services is unstructured supplementary service data (USSD)¹² technology. Relative to other technologies, USSD is a cost-effective technology that involves simple operations that can be accessed from any mobile phone, and so is widely used in the provision of MFS.¹³ Hanouch and Chen (2015) “found only a few examples where MPOs [mobile payment operators, which includes banks, MNOs and other financial service providers] are using alternate channels in response to nonprovision of USSD access.” So for the immediate term USSD remains necessary for effectively providing MFS for most firms in most markets—including Kenya and Tanzania.

The potential negative impacts of restricted channel access for competition, innovation, and, consequently, financial inclusion make channel access one of the most important competition issues in MFS. The experiences of providers in accessing USSD channels for MFS in Kenya and Tanzania further demonstrate the importance of channel access for competition in two key areas: the price of channel access, and whether access to the channel is provided at all.

The price of USSD channel access

The price of USSD channel access is critical in determining how effective competition will be in a market, since it will determine whether, and how easily, providers can enter and compete in the market. As part of this study, a number of stakeholders identified that the cost to MNOs of providing USSD channel access amounted to fractions of one Kenyan shilling. However, Table 1 shows that the prices MNOs charge banks and other third parties are much higher, some of them considerably higher.

	MNO 1		MNO 2		MNO 3		MNO 4	
	Cost (Ksh) ^a	Duration (seconds)	Cost (Ksh)	Duration (seconds)	Cost (Ksh)	Duration (seconds)	Cost (Ksh)	Duration (seconds)
Bank 1	5	180	Monthly access fee		Monthly access fee		Monthly access fee	
Bank 2	4	120	1	180	Not used		No charge	
Bank 3	5	180	No charge		Not used		Not used	
Bank 4	5	180	3	180	Not used		Not used	
Bank 5	5	180	Not used		Not used		Not used	
Bank 6	5	180	Not used		Not used		Not used	
3rd Party 1	5	180	3	180	3	180	2	180

¹² USSD, a communications service controlled by MNOs, is believed to be a critical piece of infrastructure used to provide MFS on nearly any phone, at low cost, and without requiring access to the user’s SIM card. USSD enables customers to send instructions to the MFS provider along with their personal identification number (PIN) for authentication, while enabling the MFS provider to send responses to clients and confirm transactions (Hanouch and Chen 2015).

¹³ Unlike SMS, which is “store and forward,” USSD is session based and can provide an interactive dialogue between the user and a certain set of applications. USSD requires no preconfiguration on the consumer’s SIM or handset and is already built onto most GSM networks. For more on the advantages of USSD see Hanouch and Chen (2015).

3rd Party 2	10	180						
3rd Party 3 Prepaid	10	180	3	180	3	180	2	180
3rd Party 3 Postpaid	0.5–1.5	180	3	180	3	180	2	180
Set-Up Costs (where assessed)	100,000		75,000		30,000		50,000	
Monthly Costs (where assessed)	100,000		50,000		10,000		20,000	
a. Ksh = Kenyan Shillings. Exchange rate of 101.9 Shillings to the U.S. dollar, as of 2 November 2015.								

Table 1 also highlights how competition issues in USSD access can be magnified where there is an MNO with a very large market share, identified as MNO 1 in the table.

The presence of a dominant MNO leaves third-party providers with no other option to reach the majority of the market than to go through this MNO, resulting in little incentive for the MNO to drive down the price of USSD sessions. Furthermore, this keeps the dominant MNO with considerable power to set prices in the market and control competition by providing or restricting access. Some of the third parties providing MFS interviewed for this paper stated that they use aggregators to secure channel access, since these aggregators have more leverage to negotiate better terms with the MNOs than the individual provider itself. As evidence of this, in late 2014 MNO 1 reduced the per session USSD charge to several large commercial banks to Ksh 2, yet prices paid by third-party providers for USSD sessions remained unchanged, and were typically Ksh 10 per session. One third-party aggregator that negotiates USSD access for smaller financial institutions noted that there are two available rates for sessions with MNO 1 of Ksh 2 and Ksh 10, but that the majority of financial service providers end up with Ksh 10, and in fact this aggregator had never successfully negotiated a Ksh 2 rate for any of its partners, possibly due to lower volumes of users and transactions.

There are a growing number of partnerships between MNOs and financial institutions, which has important implications for fair access to channels and pricing for this access across MFS providers. Where MNO partners' products are delivered via USSD, MNOs may remove or reduce the costs charged per session. This is the case for several MNO-financial service provider partnerships in Kenya and Tanzania where the USSD costs are zero-rated by the MNO for its partner, providing a distinct competitive advantage over other providers of similar financial services on the USSD channel.

While this may benefit consumers of these products, it may also raise competition issues since nonpartner financial institutions will face much higher costs. This matters for financial inclusion because it may restrict new entrants from competing on quality of products and services with incumbent and larger providers, since they face higher costs for accessing the same channel.

The potential impact that USSD pricing can have on effective competition is illustrated by the case of Equity Bank, one of the larger mass-market banks in Kenya. In 2014 Equity Bank acquired its own MVNO license, citing the USSD costs charged as one of the primary reasons for this.¹⁴

Accessing the USSD channel

To offer USSD access, providers must be licensed by the telecommunications authority to do so. It is therefore important that an appropriate licensing framework is in place such that there is fair access to the USSD channel, regardless of firm size or type or the content they offer. In both Kenya and Tanzania, licensing of USSD services is done by the telecommunications regulatory authority. However, in Tanzania the regulator provides the actual code, with certain numerical prefixes linked to different types of services (e.g., 149 for MFS, or 154 for educational content). By contrast, in Kenya firms apply to the regulator for the code, but the code is actually issued directly by the MNO.

When MNOs, which may be direct competitors in financial services to the firm requesting USSD codes, are the ones actually issuing the codes, those seeking codes could be at a disadvantage when negotiating with MNOs for the codes and commercial terms since those MNOs have control over the licensing process and increased leverage in negotiating terms for channel access. One aggregator active in both markets noted that it finds negotiations to be more challenging in Kenya than Tanzania since it has less leverage with providers because they do not already have a code when they go to MNOs to request access. While USSD code access was not mentioned as an issue by any providers in Tanzania, in Kenya the issue was raised by several third-party providers as a barrier to access. This may mean that having MNOs issue the codes directly could be a subtle, but significant, impediment to fair access.

Regulatory options for channel access

The extent to which an MFS provider will be affected by the pricing and/or denial of USSD access by an MNO depends, at least in part, on the MNO's telecommunications market share. An MNO with a greater market share will likely be able to charge higher prices, which may have the effect of foreclosure of the USSD access channel.

Regulatory intervention is therefore important where the competition issues related to USSD channel access discussed above may be occurring. However, we would caution that this should be implemented appropriately, and only after detailed inquiries into the specifics of USSD pricing, quality, and access, as well as broad consultation with all stakeholders who provide and make use of USSD channels. This is an area where coordination among regulators is likely to be necessary, given overlapping jurisdictions and often differing preferences in approach.¹⁵ Haunch and Chen (2015) make several prudent recommendations on regulatory interventions:

¹⁴ See Mas and Staley (2014).

¹⁵ Mas (2014) asserts that "banking and telco regulators must work out integrated regulatory regime on this. MNOs who are engaged in MFS should be obliged to offer mobile communications services to any other financial institution that requests access, on non-discriminatory and cost-oriented terms." Mas also highlights that Peru has spearheaded this approach, and that it let the market determine pricing in the first instance. In an alternative approach, India is prescribing a price for USSD.

- Where the risk of reduced investment in USSD by MNOs is low, an appropriate remedy for nonprovision of USSD access could be rules mandating that channel access is provided.
- If it is possible for an MNO to selectively degrade the quality of USSD sessions, quality standards should be considered.
- Even if access is mandated, it is possible that foreclosure could arise as a result of high USSD prices charged by an MNO to third-party Mobile Payment Operators.
- Price regulation should be used with caution, and only when there is a substantial risk of such foreclosure. Determining an appropriate price is likely to be difficult and prices challenged by various parties based on narrow commercial incentives.

Despite significant concern from providers regarding the cost of USSD sessions, without greater detail on the costs incurred by MNOs to offer the USSD channel, it is not possible to clearly state whether MNOs in Kenya are acting anti-competitively through their practices with respect to the USSD channel across access, pricing, and quality. Given the concerns around pricing, quality, and access that have been identified in both Kenya and Tanzania, USSD access—and similar MFS channels—is an area competition authorities should make it a priority and conduct formal inquiries. Such an inquiry would seek to understand the commercial terms between MNOs and providers for USSD channel access across sectors, identify any links between USSD price paid and firm size, as well as audit the fixed and incremental costs to MNOs of delivering USSD to determine whether foreclosure is taking place in the market.

Box 4. Smartphones and access to the channel

The movement toward smartphones and away from the USSD channel will be an important development in MFS in markets such as Kenya and Tanzania, but also more widely. The potential benefits for consumers include enhanced user experiences for mobile money, new product development linked to mobile money accounts, and greater competition (GMSA 2014b). The latter may arise as a result of financial institutions and third-party providers no longer requiring access to the USSD channel (and the corresponding price and quality issues that can arise) such that they are able to better compete both on price and product offering without relying on access agreements with MNOs to reach the MNOs’ sizeable consumer base (although Chen [2015] offers several important caveats regarding the impact of smartphones on competition, including the continued importance of cash-in/cash-out agent networks).

Increased smartphone use may also lead to other associated drivers of effective competition. For example, increased smartphone use may promote transparency, comparability, and consumers’ ability to switch from one MFS product or network to a preferred competing offer. Available apps

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include those that inform customers how much it will cost to send or cash out a certain amount, while one could imagine a customer being able to have the apps of several different mobile money providers as opposed to being tied to just the offering of the MNO they subscribe to. As an example, Tanzanian MNO Tigo already offers their own mobile money app for their Tigo Pesa product line, which is available to non-Tigo voice customers. Understanding how the move toward smartphones will affect competition in the market for MFS is a priority area for further exploration—not just to understand the benefits that this might bring but also how channel owners might seek to prevent effective competition by hindering the use of apps and web browsing for mobile money transactions. This should include investigation of how more sophisticated products and services such as savings, credit, insurance and securities will be provided on smartphones; as well as the role that access to application programming interface (APIs)^a of MNOs' mobile money platforms will play in allowing a wider range of MFS providers to offer services through a mobile money platform (Morawczynski 2015).

a. An API specifies how software components interact with each other. For example, an API could allow a third party to offer services that ride on the mobile money rails.

b. Transparency in MFS products

Box 5. Key competition messages regarding transparency in MFS

- Price transparency is an important element of a competitive market because it both encourages firms to compete on quality and price, and lowers search barriers for consumers, facilitating their ability to exert competitive pressure on competing products.
- Transparency practices in MFS are currently wholly inadequate across payments, credit, and other product lines. There is an urgent need for standards and policy action to impose better and standardized practices on MFS providers.
- As more sophisticated and complex products such as credit, savings, insurance, and securities are delivered via mobile money, these deficiencies in price transparency will only become more important.

While traditionally considered an issue relevant to consumer protection and market conduct, lack of pricing transparency can hinder effective competition in (at least) two important ways:

- *Increased search costs:* When customers face significant impediments or costs in their search for alternatives, sellers may be able to set prices (or quality of service) with only limited regard to competition.
- *Reduced product comparability:* Where consumers have difficulty accessing information, they may be restricted in their ability to compare the offers available in the market across the various providers.

One or both of these may result in a lack of competitive pressures on providers to offer value for money and innovative products and services. Transparency is therefore important for ensuring effective

competition and financial inclusion. However, a number of issues with respect to transparency were identified in Kenya and Tanzania, the most pertinent of which are described in the following subsections.

Transparency of mobile money person-to-person (P2P) payment costs

In both Kenya and Tanzania there is a degree of price transparency at the point of cashing in and cashing out, as agents display tariff boards. However disclosure of the cost of P2P payments appears to be less prominent.

Many MNOs do not disclose the price of a transfer either before or after a transaction is completed, either in the USSD session or in the confirmation SMS messages. In this instance, consumers only seem to be able to determine the charges in one of two ways:

1. Agent tariff boards. However, consumers are likely to be unable to check the cost of sending a payment each time they wish to do so, as wallet-based P2P payments are typically done outside of agent locations on a consumer's own handset, and agents primarily handle cash-in and cash-out services.¹⁶
2. Consumers may perform a manual calculation to “back out” the cost of the transfer, by subtracting the new balance from the balance in their previous transaction confirmation SMS, then removing the amount transferred, with the remaining sum being the charge paid for the P2P transfer. This is obviously costly in terms of time, as well as requiring a level of financial capability and awareness that many users may simply not have. It also means that consumers cannot determine how much the transfer will cost *before* they send it.

Insights into consumers' price awareness of P2P transactions is mixed. The 2013 Kenya Financial Inclusion Insights survey asked mobile money users the cost of P2P transfers, and found that many cited Ksh 27, which at the time was a common rate for lower-value transfers (Ksh 101–500) and withdrawals from Ksh 101–2,500 on M-Pesa, indicating at least basic price recall by users for common transaction amounts (Financial Inclusion Insights 2015). However, CGAP research after a significant change in M-Pesa¹⁷ transfer tariffs in August, 2014 found that many consumers who claimed to be aware of the tariff change were still anchored to the previous tariff amounts for Ksh 500 and Ksh 1,000 transfer amounts (see Box 6).¹⁸ Part of this problem is that the USSD interface restricts the information that can be communicated to consumers due to limited number of characters, plain-text only requirements, and inability to navigate backwards. However, at least one MFS provider in Tanzania—Tigo—provides pretransfer disclosure of the exact cost of the transfer, so it is technologically possible to do so and should therefore be the market standard for cost disclosures.

¹⁶ A notable exception is when agents conduct large volumes of over-the-counter transactions, where they conduct a P2P transfer on behalf of a customer, charging the normal P2P transfer fee to do so, and in some cases adding an extra informal fee on top of the official P2P transfer fee. While this is not common in Kenya or Tanzania, it is prevalent in markets such as Bangladesh, Cambodia, Pakistan, and Uganda.

¹⁷ M-Pesa is a mobile money platform provided by the MNO Safaricom in Kenya and is widely considered the most successful mobile money platform to date.

¹⁸ The Helix Institute of Digital Finance, in a review of mobile money pricing in Kenya found similar challenges in determining product pricing, noting “These prices were collected in November 2015 by reviewing provider websites and advertisements; by reviewing terms and conditions; and by calling customer service centres when necessary. It is important to note that volatile market interest rates and dynamic competitive pricing schemes mean that prices change constantly. Further, in multiple cases we received conflicting information from providers on their pricing schemes, and did our best to resolve them.” <http://www.helix-institute.com/blog/competition-kenyan-digital-finance-market-mobile-money-part-1-3>

Clearly there is a lack of transparency at many stages and across multiple payment transactions in MFS. This makes it difficult to compare the total cost of sending and receiving money across MNOs, especially when multi-step transactions are involved (for example, cashing in, sending money, and then cashing out). This in turn makes it difficult for consumers to determine which MFS provider represents best value for money, and exerts lower competitive pressures on providers.

Transparency of USSD costs on consumer-to-business (C2B) payments

MFS are increasingly used by consumers as a convenient and low-cost way in which to pay for services such as electricity, water, and consumer goods. However, here, too, there is poor transparency of the cost of doing so. This is due to the low disclosure of both the charges paid by the third-party aggregators and financial service providers to the MNOs for access to the MNO’s USSD infrastructure, as well as the costs they subsequently pass on to consumers for these C2B payments.¹⁹

A CGAP review of C2B costs in MFS with financial service providers in Kenya in 2014 found that all but one bank—and all aggregators—consulted pass on USSD access costs to consumers without any disclosure either pre, during or post session, resulting in consumers paying the full cost of access for C2B services—both what the third-party pays the MNO as well as what the third-party charges the consumer—without having any way to easily deduce these costs either in aggregate or separately.²⁰ Table 2 illustrates for the Tanzanian market how the cost of USSD sessions can be passed through to customers in its entirety, and how it can vary considerably between providers.

Table 2. Cost of USSD session charges by MNO, together with the party charged (July 2014)		
MNO	USSD session charges (Tsh)^a	Chargeable to:
MNO 1	20 per 20 seconds	Customer
MNO 2	Sliding scale from Tsh 5 to Tsh 15, depending on number of sessions per month	Customer/Bank
MNO 3	No charges	Free to customer, no proposed charges to client yet
MNO 4	Tsh 45 per minute	Customer

a. Tsh = Tanzanian Shillings. Exchange rate of 2,171.6 shillings to the U.S. dollar as of 2 November 2015

There is evidence that consumers are not price aware on the costs of USSD-based transactions. However, what is less well known is, once made aware, how price sensitive would consumers be? A key question in this area is what alternatives exist for consumers to carry out these transactions, and their comparative costs, both monetary and otherwise. Consumers identify the development of MFS as having significantly improved their lives through both accessing financial services for the first time but also offering a more convenient, cheaper and safer service compared to alternatives (e.g., using a bank

²⁰ In Kenya it also appears that passing on session costs may be unique to financial services, as one aggregator interviewed noted that only the financial institutions among their clients add on the Ksh 10 USSD charge to their customers, because they have access to the customer’s savings or mobile money account, and so can strike this amount directly from the customer’s mobile wallet to cover the cost of the session. By contrast, users of USSD in other sectors can do only post-paid billing, and so in this aggregator’s experience always absorb USSD session costs instead of passing them on to the end-user.

transfer or sending in physical cash via public transport). This raises three complicating issues for transparency:

1. How much would transparency impact use of MFS when the alternatives have significant nonfinancial costs associated (e.g., time, distance, and hassle)?²¹
2. How actively engaged are consumers in reviewing and comparing terms when choosing among the products and providers that exist in the MFS market?
3. How much do other factors, such as loyalty to an MNO's voice and data services, create "stickiness" with MFS offered by that same MNO?

As a first step to answer these questions, efforts should be made to significantly improve the very poor existing practices in pre-purchase disclosure of USSD charges so that consumers can at a minimum be made aware of price and determine the relative financial and nonfinancial costs and benefits of MFS products and providers for themselves. This will, in turn, facilitate the comparability of costs among providers and exert competitive pressures on providers.

Box 6. How price sensitive are mobile money consumers? The case of the M-Pesa tariff reductions in Kenya

To understand the impact of limited transparency of transaction costs for mobile money, it is important to understand how price aware and price sensitive consumers actually are. In August 2014, M-Pesa changed its P2P tariffs, reducing tariffs for transactions of Ksh 1,500 (approximately \$15) or below from between 24 percent and 67 percent, depending on the transaction amount, while raising tariffs for transactions between Ksh 1,501 and Ksh 45,000 (approximately \$450) from between 21 percent and 82 percent, depending on the transaction amount. (The charges before and after the changes are detail in Mazer and Rowan [2014]). The change received front page coverage in local newspapers and was widely discussed nationally, creating an opportunity to measure actual consumer response to a significant change in mobile money tariffs.

To understand consumer response to this change, CGAP surveyed 500 low-income M-Pesa users in Nairobi three months after the tariff change. Using Safaricom's "Selfcare" website, researchers were able to access full M-Pesa transaction records for these users over a six-month period, capturing transaction behavior three months before and three months after the P2P tariff change. The price responsiveness of consumers was mixed, indicating limited price awareness, but also opportunities for improving price sensitivity through increased transparency.

Overall, consumers' price awareness was not reflective of the tariff changes. Forty-six percent of consumers recalled the recent M-Pesa price change, and 39 percent self-reported changing their behavior with M-Pesa as a result. However, 96 percent and 97 percent of the consumers surveyed

Continued

²¹ One third-party aggregator in Kenya noted that of the financial institutions it serves, it receives complaints on USSD costs primarily from microfinance institutions, which would imply a different level of price sensitivity of low-income versus higher-income consumers on USSD costs.

overestimated the cost of Ksh 500 and Ksh 1,000 P2P transactions, which were now Ksh 11 and Ksh 15, respectively. It appears these consumers were anchored to the old, more expensive M-Pesa tariffs, with 38 percent citing Ksh 27 and 17 percent citing Ksh 33, which are in fact the old tariffs for P2P transactions between Ksh 101 and Ksh 3,500. Consumers also had limited knowledge of competing mobile money product costs, with only 3 percent having used Airtel Money, the mobile money service of the second largest MNO in Kenya, Airtel. These consumers cited “high fees” as the second most common reason for not using Airtel Money, despite the fact that Airtel Money has lower tariffs than M-Pesa. Finally, both younger consumers and consumers with multiple SIMs were 10 percent more likely to be aware of the M-Pesa tariff change, indicating that certain demographic groups or types of consumers—those who shop around for services—may be more price aware.

In analyzing consumers’ actual transaction patterns, there was not a general response to the tariff changes, as consumers did not shift transaction amounts to take advantage of the reduced lower-end tariffs. However, among the subset of higher frequency M-Pesa users in the sample, they were both less likely to be anchored to old tariffs and appeared to price optimize more, shifting their transactions to the reduced tariff transaction bands in 33 percent more of their transactions than lower frequency users. This would suggest that consumers can be made to be more price aware and price optimizers by “learning by doing,” even with opaque P2P tariffs. This would seem to argue that improved transparency will benefit competition by ensuring that lower-frequency M-Pesa users become more price aware and price sensitive. Under the principles of transparency, consumers should be able to access this price information easily, and not forced to figure this out on their own through their own calculations.

The research found similar issues with awareness of tariffs for bill payment services on M-Pesa, (known as “paybill” on the M-Pesa platform). Of consumers who used Lipa na M-Pesa, Safaricom’s paybill service, 35 percent of these consumers thought the tariff for paybill was zero, and only 10 percent of consumers stated a tariff that was within 10 percent of the actual tariff they were assessed for their last paybill transaction. Similar to M-Pesa P2P transactions, the higher frequency users were more likely to accurately estimate paybill tariffs.

Overall the 200 consumers surveyed who had used Lipa na M-Pesa underestimated tariffs by an average of Ksh 15, which would translate to an underestimation of cost of Ksh 861 (approximately \$9.35) per user over the course of a year given their six-month transaction volume.

This significant economic cost, given that this was a low-income population sample, and the growing use of Lipa na M-Pesa for transactions in Kenyan society, make increased transparency of tariffs an immediate priority for policy makers to set standards for across the market. As an important first step to addressing these transparency gaps, the Competition Authority of Kenya in August 2015 issued an order requiring Safaricom to provide point-of-sale disclosure of charges at all merchants using Lipa na M-Pesa that elect to charge consumers a surcharge, since whether this surcharge is applied is at the discretion of the individual merchant (Mazer 2015). This action represents an important first step to improved transparency in MFS and signals how competition authorities may be able to act on this topic where the financial sector or telecommunications authorities have not yet acted.

Transparency of terms and conditions—second generation MFS

As MFS markets develop and progress from simple mobile payments towards products like credit, savings and insurance, new issues around transparency will develop. In Kenya and Tanzania several partnerships between MNOs and financial services providers now offer savings and credit products directly through mobile money services. The best known of these partnerships are the M-Shwari (Kenya) and M-Pawa (Tanzania) products, which offer loans and interest-paying savings accounts via the M-Pesa mobile money platform that are provided by Commercial Bank of Africa, with a similar savings and lending product recently launched by Kenya Commercial Bank named KCB M-Pesa. These loan products offer examples of transparency issues which can emerge when financial products are delivered via MFS without considering the implications the channel has on the proper disclosure of product characteristics, costs, and the terms and conditions.

As an example, upon enrolling for a loan via an M-Pawa account via the M-Pesa menu on their phone, the consumer is not informed of the interest rates and rollover charges of the loan on the mobile interface before being asked to accept the terms and conditions. The consumer is instead directed to review the Terms and Conditions on the providers' websites. Aside from the obvious effort that must be made to view these terms and conditions, this information will not be accessible to consumers without internet/data access or a smartphone, resulting in many consumers failing to understand the terms of their savings or loan product. Consumers do receive an SMS with the following information immediately after accepting a loan (this example is for M-Pawa):

Dear Customer, your loan balance is Tsh.XXX. Kindly pay Tsh.XXXX by dd/mm/yy. The excess amount of Tsh.XXXX will be deposited to your M-Pawa account.

However, this is only after entering a binding loan agreement, and the loan amount is not separated from the charges to make clear the finance costs, the breakdown of how much of this is the loan principal and how much the interest owed, nor the interest rate applied. For proper disclosure of costs, these loan details should be provided prior to accepting the loan offer. There are also issues of different requirements for disclosing of costs based on the type of lender providing the digitally delivered credit (see section on regulatory arbitrage for a detailed discussion of this issue.)

Transparency and switching behavior

To have an effective demand-side which exerts competitive pressures on providers, there must be the real, or perceived, threat of the consumer switching to another provider. Switching MFS providers may not be technically difficult given the prevalence of multiple SIMs usage amongst consumers in markets such as Tanzania. However switching in response to attractive competing offers may be made difficult for customers due to costs of time, price, or ease of switching. Furthermore, in a market without interoperability consumers may be constrained in their ability to switch to another MFS provider since they will not be able to send or receive money across providers.

Switching is made even more complicated when consumers are using nonpayment products on mobile channels, such as savings and loan products. Some savings products that are offered via MNO/bank

partnerships restrict access to the account to only that via the mobile wallet of the partner MNO. This could lead to consumers who wish to terminate their service with an MNO being unable to access their bank account, even though it legally sits with the bank, not the MNO, since the MNO and bank have agreed up front to restrict branch-level access. Similarly, in the case of a “divorce” of an MNO and a bank where this mobile-only access policy exists for savings accounts, it is not clear how account holders would be able to access their savings after the two providers end their partnership.

For loan products, when an FSP is not required to report to the credit reference bureau because they are not regulated or do not fall under the bureau’s jurisdiction, switching providers may result in the loss of not just access to credit, but the established credit history the consumer accumulated by borrowing from the FSP. This could restrict future access to loans or inaccurately represent the consumer’s credit risk to other lenders, causing inability to access credit or increased cost of credit for the consumer. All of these factors may contribute to consumers exhibiting “stickiness” toward their existing provider in the MFS market, which can reduce shopping around and switching, and thereby effective competition.

Toward a transparent MFS ecosystem

Transparency in MFS can be enhanced by provider improvements of messaging and formats, as well as improved standards of price disclosure on MFS, which would be best applied by the regulator.²² Relevant authorities should set market-wide transparency rules which ensure product terms are fair, clear, and not misleading, which will increase comparability between products and promote more effective competition. There is already scope for the authorities in Kenya and Tanzania to enforce existing legislation on this point, and so it is just a matter of signaling obligations to providers, monitoring market practice, and punishing noncompliance.²³

MFS is a market which is both large and growing. It is therefore to be expected that consumers will wish to switch providers both now and in the future to take advantage of new products and services, as well as take up the products and services which represent best value for money for them. This is especially true if factors such as increased interoperability and reduced interconnection rates steer consumers away from having multiple SIMs and phones. Authorities in mature markets such as Kenya and Tanzania should therefore seek to facilitate the ease of switching financial accounts and sharing financial history easily from one MFS provider to another, and basic transparency measures are an important step in this direction.²⁴

²² In Tanzania, it is notable that the Electronic and Postal Communications (Consumer Protection) Regulations, 2011 (see legislation at <http://www.tcra.go.tz/images/documents/regulations/consumerProtection.pdf>) state that “A licensee shall not charge consumers for bills or billing related information.” However, it also lists a number of exceptions, such as where there is a separate agreement (which might include terms and conditions).

²³ In Tanzania the Postal Communications (Tariffs) Regulations (2011) state that charges should be transparent and that tariffs “shall be sufficiently clear as to enable the end-user to determine the description of the service, the details relating to the nature of the service, amounts and charges payable for such service.” They also state that “a licensee shall provide accurate billing information on tariffs and usage in order for customers to verify whether or not they are billed correctly.” Similarly the Electronic and Postal Communications (Consumer Protection) Regulations (2011) state that “when promoting product or service, a licensee shall indicate clearly the total charge for the package and terms and conditions that are applicable.” In Kenya both the Central Bank of Kenya’s Prudential Guidelines (2013) and the National Payment Systems Act (2014) put forth standards and obligations for disclosure of costs and terms for traditional financial services and for mobile money.

²⁴ One possible mechanism is through including MFS accounts as part of any Mobile Number Portability initiatives.

c. Interoperability

Box 7. Key competition messages regarding transparency in MFS

- Interoperability may promote effective competition through reducing network effects.
- Removing agent exclusivity may be an important enabling factor to interoperability, as well as a less politically sensitive way for a competition authority to act to encourage interoperability without forcing it upon providers.
- There may be “natural monopoly” aspects of large-scale MFS payments networks that should be evaluated when determining policies in areas such as interconnection rates.
- The emergence of new actors such as banks and MVNOs in Kenya and Tanzania may complicate discussions on interoperability further by introducing new industries and actors to the debate.

Interoperability can broadly be described as the interconnection of mobile money services either between providers or with external parties.²⁵ It brings benefits to consumers, mobile money providers and agents through increased convenience, cost savings, a greater choice of providers and better liquidity management for agents. Interoperability is also relevant to some of the most important competition issues in MFS:

- *Reduction in network effects that restrict consumers’ freedom to switch.* Without interoperability, it is possible that consumers will remain with an MFS provider they do not prefer simply because of the size of that network, and so are not able to freely choose based on quality of service and price.
- *Improved user experience and ease of account usage.* Instead of interoperability, some MFS providers offer off-net “voucher” systems, wherein consumers can send off-network, but the recipient must cash out at the sending MFS provider’s agents—often at a higher charge than an on-net P2P transaction, and cannot store this value on their mobile wallet. With fully interoperable systems these types of inferior workaround solutions for across-provider transfers become irrelevant.
- *Reduction in agent exclusivity.* With interoperability, agents may be more easily able to function as agents for multiple MFS providers, increasing diversity of MFS options for consumers, in particular for rural consumers with limited agent network access.
- *Access to MFS channels from third-parties.* With interoperability the MFS network on which a transaction originates is no longer a barrier to that transaction landing on another MFS network, and so could exert pressure on providers that previously restricted or priced channel access in an anti-competitive manner.

Despite the potential benefits to fair competition and increased financial access, interoperability has not yet come to fruition in most MFS markets. Tanzania is a notable exception to this, while Kenya remains without any signs of interoperability being achieved soon. This difference is most likely explained by the relative market shares of MFS providers in the two markets (see Table 3). As Benson and Loftesness

²⁵ In this discussion interoperability refers to the technological interoperability of MFS using common standards and protocols, and not access to facilities and services as is sometimes referred to in discussions regarding interconnection.

(2013) note, “early dominance by one provider can slow or stop interoperability.”

	Vodacom	Airtel	Tigo	Combination of two or more providers' services
Tanzania MFS Customer Market Share ^a	53%	13%	18%	16%
	Safaricom	Airtel	Equitel	Other providers
Kenya MFS Customer Market Share ^b	76.8%	11.5%	2.5%	9.2%

a. GSMA (2014a)
b. Communications Authority of Kenya (2015)

In Kenya, the concentrated market share across MFS providers may both create less demand for interoperability from consumers (since most of their peers will use the same provider) and less willingness on the part of the dominant MNO to extend interoperability (since they may have more to gain by protecting their share of the pie rather than expanding the size of it). This may explain why, despite an articulation of interoperability as a goal for the market in the National Payment Systems Act of 2014, there has been no noticeable progress towards this goal by the industry. In fact, it is quite reasonable to expect that with such a dominant MFS provider as Safaricom in Kenya, interoperability would have to be pushed on the market by the authorities to take effect.

By contrast, the less concentrated mobile money market share in Tanzania across MFS providers makes interoperability more appealing for both consumers and providers alike.²⁶ This difference in market share is likely the primary reason why Airtel, Tigo and Zantel—together accounting for 74 percent of mobile subscribers and 47 percent of mobile money subscribers—were able to successfully reach a mobile money interoperability agreement in 2014, and why Vodacom subsequently joined the interoperability agreement in 2015.²⁷ While forcing interoperability in the early stages of a mobile money market may hinder market growth by discouraging first-movers (McKay and Zetterli 2013), who must invest significantly in building out their product line, marketing, agent networks, platform and other up-front costs, there is still a role for regulation to create an environment that is conducive to interoperability in the long run.²⁸ From a competition perspective, there are several areas where it may be both appropriate and beneficial for policymakers, including competition authorities, to take steps to facilitate interoperability in the market. These include the following: Restrictions on agent exclusivity, interconnection rates for MFS interoperability, and requiring potential technological interoperability.

²⁶ However, an important caveat here is that market concentration is significantly higher in rural versus urban Tanzania, as the dominant provider Vodacom's agent network market share is 60 percent outside of Dar es Salaam, versus 41 percent in Dar es Salaam where the other two leading MNOs have much more balanced market share (McCaffrey and Schiff 2014).

²⁷ For a detailed analysis of the interoperability agreement in Tanzania, and the process to achieve this agreement, refer to IFC (2015).

²⁸ This stance is also advocated by the Centre for Global Development (Bourreau and Valletti 2015): "...regulation should focus on ensuring that firms do not take actions that increase the barriers to achieving interoperability."

Agent exclusivity

Agent exclusivity restrictions allow MFS providers to stipulate that a mobile money agent remain “exclusive” to them and not offer competitors’ services in their location. Such agreements tend to reinforce network effects²⁹ since consumers will wish to use a MFS provider with a large agent network, and these network effects in turn reinforce the choice of an agent to remain exclusive to a dominant provider to maintain access to a large number of potential customers. In this way agent exclusivity can simultaneously reinforce a dominant provider’s position and also result in a barrier to entry for new firms, since they must establish their own network of agents at considerable cost.

The removal of agent exclusivity can also support interoperability by reducing network effects and, therefore, barriers to entry in the market. In Tanzania several stakeholders interviewed expressed the view that interoperability is more important for competition in MFS than removing agent exclusivity, but agent nonexclusivity is an important first step in the process to interoperability, as it helps show the business case for interoperability and makes agents familiar with a range of providers’ services. For this reason the regulatory authorities in Tanzania mandated nonexclusivity early on in Tanzania to allow the various MNOs to compete more effectively. Subsequent research by the Helix Institute of Digital Finance (McCaffrey and Schiff 2014) found that agents in Tanzania were much more likely to be nonexclusive than in Kenya (although the rates of nonexclusivity range across the country, with 84 percent of agents nonexclusive in the largest city in Tanzania, Dar es Salaam, compared to just 38 percent in rural areas).

Similarly, in July 2014 the Competition Authority of Kenya mandated the removal of agent exclusivity for all providers, which is widely believed to have improved the availability of non-exclusive agents, as noted by the reduction in exclusive agents from 96 percent in 2013 to 87 percent in 2014 (Khan, Mehrotra, Anthony, and Kuijpers 2014). However, it will take time for nonexclusivity to be fully applied or enforced. In consultations with stakeholders a few months after the ruling was issued, several reported that some agents were being intimidated or coerced to remain exclusive despite the ban on exclusivity. This highlights the challenge of effectively shifting a market built on exclusivity to nonexclusive arrangements in a short time period. It also demonstrates the need for regulatory monitoring and enforcement on competition grounds where breaches of such regulations are identified. Simple monitoring such as mystery shopping and an agent hotline should be used to monitor compliance, and are an area where a competition authority could lead market monitoring, share findings with the financial and telecommunications authorities, and jointly develop policies or carry out enforcement measures to ease the transition to a system where agents are truly free to choose to be exclusive or nonexclusive. In fact, at a public event in 2015, a representative of the Central Bank of Kenya noted that the Competition Authority of Kenya is better suited to monitor and enforce the implementation of agent exclusivity than the Central Bank of Kenya, which signals an opportunity for support and collaboration by the two authorities to ensure competition in MFS (Mwaura 2015).

²⁹ Network effects refers to a situation where there is a sufficiently large number of users of a service that consumers choose to use this service even if they prefer the service of a competitor because of their need to use the same network as their peers. This effect is particularly significant when there is a large network that is also closed off to transactions incoming or outbound to other similar networks.

Interconnection rates and technological interconnectivity

As interoperability in MFS is pursued, the issues of interconnection rates and technological interconnectivity will become increasingly relevant for regulators to consider, as the setting of these rates can encourage or discourage dominant providers to accept interoperability. Interconnection rates are important for effective competition for several reasons. First, a high interconnection rate may result in noninteroperability in practice. This would occur if the rates were so much in excess of within-network transactions that it would create a significant enough additional cost to discourage consumers from transacting across networks.³⁰ This would result in a reinforcement of the network effect. In addition, a high interconnection rate can act as a barrier to entry since a new entrant will by definition have few customers that can be sent mobile money within their network, resulting in expensive transfers for their customers and/or high costs for the MNO since the MNO initiating the across-network call or transaction has to compensate the receiving MNO under current industry arrangements. This was cited as a concern for smaller MNOs in Tanzania who suffer financial disadvantages when their users call off-network to larger MNOs with greater frequency than users of larger MNOs call off-network to the smaller MNOs.

In Kenya even without mobile money interoperability having been achieved, increasing competition is bringing issues of interconnection rates and fees for cross-network transfers to the forefront. In August, 2015 Safaricom announced that it was increasing the rates charged for transfers from bank accounts to M-Pesa to align them with the M-Pesa P2P tariffs, citing consumer errors in sending to the wrong accounts during bank to M-Pesa transfers, and hoping to drive consumers to transfer into their own M-Pesa account first before sending funds to another M-Pesa account holder. However, Equitel—Equity bank’s MVNO and new rival to Safaricom—has issued a complaint to the Central Bank of Kenya that this price change is not justified (Ouma 2015). The change in tariffs was delayed but will take effect in December 2015. Similar to allegations on USSD channel access charges, it is difficult to determine at first glance whether prices are cost-reflective or anti-competitive. For this reason competition authorities may play an important role in interoperability by examining existing interconnection rates and how they are set.

In concentrated MFS markets like Kenya, authorities could play a forward looking role in ensuring that those “inside” current mobile money interoperability agreements do not seek to impose anti-competitive constraints on those “outside,” which might extend to intervening to impose “fair” interconnection rates where appropriate. This approach is controversial, and should likely only be pursued if industry efforts and other softer-touch policy measures fail to induce “fair” interconnection rates.³¹

³⁰ For example, the average off-net mobile money transfer charge is around three times higher than on-net in Kenya, according to the Communications Authority of Kenya.

³¹ While such a move in mobile money interconnection rates would be without precedent, the Indian authorities recently set a fixed price for USSD sessions. This was enacted to resolve similar issues of fair pricing across rival firms, and indicates that issues of pricing and access to MFS channels may not always be resolved by providers due to market concentration or other complicating context specific to the particular MFS market. However, in India the MNOs have in turn refused to allow USSD access to rivals, leading to a recent case where global card network Visa withdrew their planned mobile money offering in India. This may mean that a fixed price that is too low will stifle the growth of mobile money in a market (Ghosh 2015).

A less forceful, but also important approach to support MFS interoperability is to require *potential* technological interoperability. This ensures that once providers agree on the principle of interoperability and the commercial terms, there are already the technical elements in place to allow for MFS interoperability. In Tanzania, the Tanzania Communications Regulatory Authority ensured from the outset that the MNOs' systems had the capacity to be interoperable and adhered to international standards. Similarly, the new National Payment System Act in Kenya requires that "[a] payment service provider shall use systems capable of becoming interoperable with other payment systems in the country and internationally."³²

Box 8. Payment systems as a utility

Payment systems tend to exhibit strong network effects, whereby the value of a product or service depends on the number of other consumers using it. Where there is free and open access to those networks there are generally few competition concerns. However, where there is some element of restricted access, this can result in a degree of market power on behalf of those "inside" the network. Concerns around network effects in payments systems have resulted in some markets^a introducing "utility style" regulators of payment systems (in particular where there are also concerns around high concentration of those running the payment systems) given the importance of payment systems to the functioning of the wider economy.

Mobile money payments can be an example of a closed network, whereby some restrictions can be set to gain entry to the market. In the market for MFS, refusing to interoperate with rival firms, making it difficult to do so, or making it expensive to do so are restrictions that can be used to deny access to a network. Where a dominant firm can employ one of these restrictions, it is able to prevent customers of rival firms from sending money to, or receiving money from, its customers. This can lead to new customers being forced to choose between being able to send money to and from a large percentage of existing customers, such as family and friends, versus a smaller fraction of the market. In these cases, most consumers will choose the larger firm, reinforcing its dominance and the network effect, and exacerbating the competition issues within the mobile payments system.

a. For example, the U.K. Government's March 2013 consultation "Opening up UK payments" proposed "to bring payment systems under formal economic regulation, and establish a new competition-focused, utility-style Regulator for retail payment systems." In the response to the Consultation, the Treasury said, "While the new regulatory regime for payments will be established under the Financial Conduct Authority (FCA), the Payment Systems Regulator will adopt a utility-style approach, distinctive from the FCA's existing remit." See FCA Payment Systems Regulator (2015).

Supporting competitive drivers toward interoperability

While actions by regulators may be the most powerful potential drivers of interoperability in MFS, this does not necessarily mean that interoperability must be mandated by regulation. In Tanzania the government supported, but did not lead, the efforts headed by the International Financial Corporation

³² <http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2014/08/NPSRegulationsLegalNoticeNo-2-109.pdf>

(IFC) and MFS providers that led to MFS interoperability (Musa, Niehaus, and Warioba 2015). Nor did it mandate interoperability at the early stages,³³ instead it chose to subsequently formalize any agreements made by industry through rules issued by the authorities afterward, to ensure interoperability, once in place, is consistent and permanent.³⁴

However, experiences in similar sectors, such as telecommunications and bank payments, and lessons from concentrated MFS markets, such as Kenya, mean a supportive approach may not be sufficient to overcome barriers to MFS interoperability in all markets. Therefore, in heavily concentrated MFS markets such as Kenya it may be important for authorities to take a stronger approach to encouraging interoperability than was required in Tanzania. In this way, the ruling prohibiting agent exclusivity issued by the Competition Authority of Kenya in July 2014 may be a helpful step in the push toward full interoperability of mobile money in Kenya in the future.

Given the importance of local market context in considering competition-related measures toward MFS interoperability, it is prudent for policy makers to begin not with policy actions, but instead with an analysis of the actual competitive environment and its implications for interoperability. Such analysis could be conducted by a competition authority, financial sector, or telecommunications regulator, and could include analysis of the following aspects of interoperability:

- Potential benefits to consumers and market development of interoperability, to determine if these benefits merit more interventionist policies to bring about interoperability.
- Comparative analysis of interoperability arrangements in analogous high- and low-concentration MFS markets.
- The relationship between removal of agent exclusivity and interoperability, including monitoring compliance with agent nonexclusivity provisions.
- Changes in market behavior post-interoperability, including changes in off-net and total mobile money transactions, changes in channel access and pricing for third-parties across MFS channel providers, stored value on mobile money wallets, use of value-added services, and the number of active SIM cards across providers.

³³ The Electronic and Postal Communications Act (2010) states that “[e]very license holder has the right to negotiate an agreement for access to electronic communications networks and services of another license holder for the purposes of enabling the provision of electronic communications services to the public. Similarly every license holder has the obligation to negotiate such an agreement.” The Bank of Tanzania’s Electronic Payment Schemes Guidelines (2007) state that “a bank or financial institutions electronic payment schemes should be open systems capable of becoming interoperable with other payment systems in the country and should comply with the minimum international acceptable standards provided.” The guidelines also state that “the pricing policies should take into account affordability of the services to a wider market reach and that the access criteria for participating in the electronic payment scheme is transparent.”

³⁴ This is also the approach advocated by the Center for Global Development (Bourreau and Valletti 2015) who recommend “...that regulation should generally follow an ex-post approach: regulators should allow maximum scope for market development to be guided by competition between networks, while reserving a credible option for ex-post regulatory intervention should this become necessary at some point in the future in the light of market developments. The case of Tanzania illustrates how interoperability can be the result of a market solution rather than an imposed regulation.” Similarly Nyaga (2014) asserts that “[t]he timing and cost-effectiveness of any regulatory intervention [on interoperability] must be appraised carefully, and market-led solutions should be the preferred option. This means that any mobile-payment platform established by a mobile provider should be open to other account holders within an agreed-upon time and that a fair basis is established for new entrants to use existing payment infrastructure.”

- Inclusion of new MFS channels (such as the TigoMatic mobile money ATM in Tanzania³⁵) in interoperability agreements for cash-out and cash-in along with mobile money agents, since they may become important access points for mobile money users in the future.
- Evaluating the scope for regulatory intervention on interconnection rates in mobile money, if needed.
- Interoperability issues for nonpayment MFS, such as savings accounts tied to mobile wallets or credit history built via borrowing on MFS channels.
- The importance of a switch between banks, between MNO,s and ideally, between all providers offering financial services via mobile channels.

Box 9. Key competition messages regarding data in MFS

- Data generated by MFS accounts and transactions can be an important tool for providing new financial products and services to previously underserved consumers.
- A lack of information and data sharing, in particular credit information, can lead to barriers to entry, barriers to switching, and reduced innovation in MFS. This will result in less effective competition and, both directly and indirectly, reduced scope for financial inclusion.
- Improved standards for permitted and nonpermitted use of consumers' transactional data in mobile and MFS should be a priority for competition, financial, and telecommunications authorities, who will likely need to coordinate in setting new standards for how data in the MFS space is owned, accessed, and shared.

d. Data sharing in MFS

New products and services are emerging in the mature MFS markets of Kenya and Tanzania. This includes credit, savings, and insurance products. Key to the provision of these services is access to information and data on the risks that consumers represent. This makes data on consumers' voice, SMS, data, and mobile money activities incredibly important to MFS providers' ability to offer such services, and compete with each other. As these data become increasingly useful for providing these financial services, their monetary value to providers and financial inclusion potential for consumers will only increase. However, current practices in many MFS markets regarding consumers' financial information restrict consumers' own access to their information, and their ability to use this information to receive competing offers in the open market. Resolving how the data generated from MFS are to be accessed and shared by consumers and providers, and how access to and sharing of these data should be regulated, is an important emerging issue for both competition and financial inclusion.

From a competition perspective, the most important elements of discussions on data sharing and data ownership in MFS include the following:³⁶

- *Information asymmetries.* The increased availability of credit information, through credit sharing, can mitigate the problem of adverse selection, whereby lenders are unable to differentiate between borrowers of different risk. Reducing the effects of adverse selection can

³⁵ <http://allafrica.com/stories/201409030618.html>

³⁶ For more information see Bank of England (2014).

lead to more informed credit decisions and more effective competition in the credit market, which should in turn lead to lower lending rates and a greater availability of credit, promoting financial inclusion.

- *Barriers to entry.* When credit data are not shared between lenders, it can create a barrier to new entrants because they will lack the richness of data that incumbent providers enjoy due to being a first mover with a portfolio of customers' data already acquired that they can credit score against. This will restrict new entrants' ability to assess creditworthiness and therefore impede effective competition and reduce the degree of competition between incumbent lenders.
- *Barriers to switching.* A lack of credit information sharing can restrict a consumer's ability to switch providers, because rival providers are unable to assess the creditworthiness of those who are not currently their customers, restricting competition. If their provider chooses not to lend to them, or to exit the market, while failing to share credit information, the consumer may lose any future ability to borrow with another provider.
- *Innovation.* The wider availability of credit data could bring about further innovation in dynamic MFS markets. Such innovations can drive competition between lenders and promote increased uptake and use of MFS products.

Lending through MFS is likely to grow significantly in the near future, therefore, data sharing will become increasingly important for all of the reasons set out above. There is a strong rationale for acting in this space early, including considering the extent to which such data may be a public good that consumers can use to increase their financial access and enforcement of credit reporting rules in the MFS space.

Kenya is the leading global market for credit delivered via mobile money. It is a market where competition and financial inclusion issues related to MFS data sharing are emerging that may require policy action. For example, one of the commercial banks providing MFS loans to millions of Kenyan borrowers is not reporting these borrowers' positive information to the Kenyan credit bureaus for digital loans, despite this being required by law, thereby precluding millions of consumers from having accurate risk assessments by other lenders, and tying them closely to the incumbent lender that controls their positive borrowing history. Similarly, terms and conditions that restrict consumers' ability to share their own MFS data—such as Safaricom's restricting consumers from sharing their own transactional data accessed via its online transactional record-keeping services of Selfcare for commercial purposes³⁷—is occurring in the market, restricting competition and consumers' abilities to switch lenders, and therefore should be identified and prohibited by authorities. Finally, the lack of rules on sharing of MFS data may be opening up consumers to data risks as they seek to access a greater diversity of credit offers. At least one digital lender in Kenya currently requires potential borrowers to let it access all the information on the core Android operating system, which includes text messages such as the transaction receipts from mobile money providers. Because its MFS transactions and positive borrowing data are treated as the property of the MFS provider, consumers appear to be exposing themselves to heightened data security risks in order to become more financially included.

Given the evidence of anti-competitive practices and consumer data security risks emerging in leading MFS markets such as Kenya, improved standards for permitted and nonpermitted use of consumers' transactional data in mobile and MFS should be a priority for competition and financial and

³⁷ See, for example, Safaricom (n.d.) Clause 10.2.

telecommunications authorities, who will likely need to coordinate in setting new standards for how data in the MFS space are owned, accessed, and shared.

e. MFS regulatory authorities and competition

Box 10. Key competition messages regarding MFS regulatory authorities and competition

- Existing regulatory arrangements in the telecommunications and financial services industries may not adequately cover all MFS providers and product lines, and may lead to regulatory arbitrage or advantages conferred to certain providers based on the type of provider they are, rather than the services they provide.
- Competition authorities can support and complement telecommunications and financial sector authorities, and should formalize coordination agreements.
- Competition authorities have a market-wide jurisdiction and so may be able to enforce certain competition-relevant policies in MFS more broadly and thoroughly across provider types, ensuring effective competition in MFS markets.

Though countries differ, there are generally three different regulators operating in the MFS space. These are the competition regulator, the financial regulator (often a central bank), and the telecommunications regulator. Each of these regulators will obviously differ in mandate, capacity, areas of focus, and crucially, jurisdiction. However, irrespective of jurisdictional questions, there are several important regulatory issues that authorities should focus on to ensure effective competition for MFS in their market.³⁸

Issues of regulatory arbitrage across provider types and product lines

If competition is to flourish in the market for MFS, it is important that many providers and provider types are able to both enter the market and compete effectively with each other. One barrier is providers competing in the same market being subjected to differential regulations. The increasing number of electronic money and payment service provider regulations globally is an important step toward an open MFS ecosystem that is provider-neutral. In Kenya, the National Payment System Act (2014) takes “a functional (rather than an institutional) approach to regulation where banks and nonbanks—including Mobile Network Operators—are permitted to provide mobile money services” (GSMA 2014a). Similarly, the Payment Systems Act (2015) in Tanzania provides for both banks and nonbanks to be licensed and approved as issuers of electronic money, ensuring the regulations do not favor one provider type or another and reducing regulatory arbitrage.

³⁸For more on the appropriate regulatory set-up, see Bourreau and Valletti (2015).

Box 11. MVNO licenses: A path to increased competition in MFS?

MVNO licenses allow non-MNOs to purchase spectrum from an MNO and offer telecommunications services. The primary utility of such a license for a financial service provider is to control its own mobile channel, which as noted in the preceding section on Channel Access, can have significant cost, quality, and competition implications.

The launch of the MNVO Equitel by Equity Bank in Kenya demonstrates how an MVNO license can help increase competition in a market. The implications of the MVNO license for Equity Bank on competition in the market are perhaps best evidenced by the dominant MNO's, Safaricom's, subsequent actions after Equitel's MVNO launch. These include a significant change in M-Pesa P2P transfer fees in August 2014, which was seen by many as a direct response to Equitel's promise of significantly lower prices for P2P on its new MVNO (Mazer and Rowan 2014); the reduction in USSD session charges to several larger commercial banks in Kenya; and legal challenges Safaricom presented to block Equitel's use of SIM overlay—or "thinSIM"^a—technology on the basis of security risks to Safaricom SIM cards, despite expert opinions noting limited security risks for Safaricom SIM cards of the Equitel thinSIM (Kakah 2015). However, MVNO licenses, while possibly beneficial to competition, may not be a viable option for smaller providers who face considerable barriers to entry. An MVNO license requires significant up-front investments to build and operate a mobile telecommunications platform. This may mean that MVNO licenses for financial service providers could be an exception rather than a rule, and an option only for very large and highly capable providers such as Equity Bank, which has leveraged its more than 10 million existing customers to grow the Equitel subscriber base to more than 1 million as of July 2015.

a. SIM overlay technology comprises a paper-thin plastic sheet embedded with a chip, which is placed on top of a primary SIM card. This allows the user to receive services from two providers simultaneously.

However, neither of these acts address issues or regulatory arbitrage that exist for nonpayment products delivered via mobile money channels. For example, loan products can be offered by unregulated entities such as lending-only institutions in both Kenya and Tanzania (as is the case in many emerging markets). This has led to regulated and unregulated providers offering similar low-value, instant loans via MFS, but with different know-your-customer (KYC), market conduct (in particular pricing transparency), account opening requirements, and different levels of supervisory oversight. So while the products could be exactly the same in design, terms, and delivery channel, one provider is put at a competitive disadvantage to the other, and one consumer receives less protection than another accessing a similar product.

Regulatory coordination among financial, telecommunications, and competition authorities

If different provider types who are regulated by different authorities compete in the same market, then the various authorities will need to work together closely.³⁹ This will be important so as to both avoid regulatory arbitrage and coordinate on licensing issues, supervision, and enforcement. Regulators will typically differ in the way they approach an issue; in the strictness of the legal standard on which intervention may be based; and in the powers they have at their disposal to affect a remedy. There may even be cases where there are direct contradictions in the rules that providers are subject to by different authorities. There may also be a “two birds with one stone” opportunity for increased efficiency when authorities work together to address particular competition and consumer protection issues.

For all these reasons it is important for the competition authority, financial regulator, and telecommunications regulator to coordinate their efforts in the MFS market. Key to such coordination will be the will of stronger, more established authorities, such as central banks, to support those who are still developing their capacity, such as recently established competition authorities.

As an example of such coordination, in Kenya Memorandums of Understanding have been established between the Competition Authority of Kenya and both the Central Bank of Kenya and the Communications Authority to facilitate collaboration on competition-relevant issues. This coordination will be all the more important following the Kenyan Parliament’s passing of a law that removed Communications Authority’s ability to independently declare market dominance in the telecommunications sector, and requires them to consult with the Competition Authority before making a declaration of market dominance.⁴⁰ In Tanzania, the Fair Competition Commission coordinates with the financial and telecommunications authorities on matters such as market conduct. However, while the Bank of Tanzania works in partnership with the telecommunications regulator, the competition authority has only concurrent jurisdiction with the telecommunications regulator but not with the Bank of Tanzania.

III. Conclusion

This Working Paper set out to identify the key competition issues in MFS in Kenya and Tanzania, to highlight to policy makers and regulators in both these markets and more nascent MFS markets the areas that they may wish to devote their scarce resources to as their MFS markets develop.

These priority competition issues are channel access, transparency, interoperability, regulatory coordination, and data sharing. While these may not be the only competition issues to emerge in MFS markets, they represent those that competition authorities and regulators may wish to pay particularly close attention to as their MFS markets develop.

³⁹ Nyaga (2014) also notes that “[a]s is the case in most other developing regions, national regulations have not kept pace with developments in the field. It is therefore imperative that regional and national authorities identify and address the gaps and potential overlaps between their existing legislative and regulatory frameworks.”

⁴⁰ <http://www.businessdailyafrica.com/CA-loses-power-to-regulate-dominant-telcos/-/539546/3021508/-/item/0/-/ilbadqz/-/index.html>

Promoting and ensuring effective competition in MFS markets are central to promoting financial inclusion. Effective competition helps ensure that consumers will have access to high-quality, innovative, value-for-money products and services, which in turn will promote increased uptake and use of MFS, and creates sufficient space for new innovators to enter the market and further expand the range of products offered via mobile money channels.

Competition authorities can play an important role in ensuring the development of diverse and open MFS ecosystems. As the research from Kenya and Tanzania has demonstrated, there are numerous issues in MFS where competition authorities' jurisdiction will be highly relevant. Furthermore, as these MFS ecosystems become more diverse, bringing in a wider range of industries and product types, competition authorities' market-wide jurisdiction can facilitate a fair application of rules and requirements on fair play across banks, MNOs, and other provider types. This research has identified several priority action areas for competition authorities in two leading MFS markets, and we would advise competition authorities in other fast-growing MFS markets to conduct a similar initial analysis to identify barriers to competition that may be hindering the development of an open, diverse, and competitive sector that will continue to expand the horizons of financial inclusion.

IV. References

- Bank of England. 2014. "Should the Availability of UK Credit Data Be Improved?" Discussion Paper. London: Bank of England. <http://www.bankofengland.co.uk/publications/Documents/news/2014/dp300514.pdf>
- Bank of Tanzania. 2007. "Electronic Payment Schemes Guidelines." Dar es Salaam, Tanzania: Bank of Tanzania, May. https://www.bot-tz.org/PaymentSystem/e_Schemes%20Guidelines%20June%202007.pdf
- Bourreau, Marc, and Tommaso Valletti. 2015. "Enabling Digital Financial Inclusion through Improvements in Competition and Interoperability: What Works and What Doesn't?" CGD Policy Paper 065. Washington, D.C.: Center for Global Development. <http://www.cgdev.org/sites/default/files/CGD-Policy-Paper-65-Bourreau-Valletti-Mobile-Banking.pdf>
- Benson, Carol Coye, and Scott Loftness. 2013. "Interoperability in Electronic Payments: Lessons and Opportunities." CGAP Blog, 30 May. <http://www.cgap.org/publications/interoperability-electronic-payments-lessons-and-opportunities>.
- CGAP. 2014. "Tanzania's Mobile Money Revolution." Infographic. Washington, D.C.: CGAP. <http://www.cgap.org/data/infographic-tanzanias-mobile-money-revolution>
- Communications Authority of Kenya. 2015. *Quarterly Sector Statistics Report, January-March 2015*. <http://www.ca.go.ke/images/downloads/STATISTICS/%20Sector%20Statistics%20Q3%202014-2015.pdf>
- Financial Conduct Authority Payment Systems Regulator. 2015. "A New Regulatory Framework for Payment Systems in the UK." London: Financial Conduct Authority Payment Systems Regulator. <https://www.psr.org.uk/sites/default/files/media/PDF/PSR%20PS15-1%20-%20A%20new%20regulatory%20framework%20for%20payment%20systems%20in%20the%20UK%20-%20Policy%20Statement.pdf>
- Financial Inclusion Insights. 2015. "Kenya." <http://finclusion.org/country-pages/kenya-country-page/>
- Ghosh, Sugata. 2015. "Visa Shelves Mobile Payment Venture in India as Telecom Companies Refuse to Share Their Network." *The Economic Times*, 21 September. http://articles.economictimes.indiatimes.com/2015-09-21/news/66761208_1_npc-visa-usd
- GSMA. 2014a. "The Mobile Economy 2014." http://www.gsmamobileeconomy.com/GSMA_ME_Report_2014_R2_WEB.pdf
- GSMA. 2014b. "Mobile Money in Tanzania." <http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2014/03/Tanzania-Mobile-Money-infographic-GSMA-MMU.pdf>
- GSMA. 2014c. "Smartphones and Mobile Money: The Next Generation of Digital Financial Inclusion." GSMA Discussion Paper, July.

- Hanouch, Michel, and Gregory Chen. 2015. "Promoting Competition in Mobile Payments: The Role of USSD." Brief. Washington, D.C.: CGAP, February. <http://www.cgap.org/sites/default/files/Brief-The-Role-of-USSD-Feb-2015.pdf>
- IFC (International Finance Corporation). 2015. "Achieving Interoperability in Mobile Financial Services: Tanzania Case Study." Washington, D.C.: IFC. http://www.ifc.org/wps/wcm/connect/8d518d004799ebf1bb8fff299ede9589/IFC+Tanzania+Case+study+10_03_2015.pdf?MOD=AJPERES
- Kakah, Maureen. 2015. "Equity Gets Court Backing to Roll-Out Thin SIM Technology." *Business Daily*, 30 May. 2015 <http://www.businessdailyafrica.com/Corporate-News/Equity-gets-court-backing-to-roll-out-thin-SIM-technology/-/539550/2734256/-/ff86tu/-/index.html>
- Khan, Sheharyar, Aakash Mehrotra, Leena Anthony, and Dorieke Kuijpers. 2014. *Agent Network Accelerator Survey: Kenya Country Report 2014*. Nairobi: Helix Institute of Digital Finance. http://www.helix-institute.com/sites/default/files/Publications/Agent%20Network%20Accelerator%20Survey%20-%20Kenya%20Country%20Report%202014_0.pdf
- Mas, Ignacio. 2014. "Shifting Branchless Banking Regulation from Enabling to Fostering Competition." London: Oxford University. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1692164.
- Mas, Ignacio, and John Staley. 2014. "Why Equity Bank Felt It Had to Become a Telco—Reluctantly." CGAP Blog, 18 June. <http://www.cgap.org/blog/why-equity-bank-felt-it-had-become-telco-%E2%80%93reluctantly>
- Mazer, Rafe. 2015. "Fixing Hidden Charges Lipa na M-Pesa." CGAP Blog, 17 August. <http://www.cgap.org/blog/fixing-hidden-charges-lipa-na-m-pesa>
- Mazer, Rafe, and Philip Rowan. 2014. "Price Sensitivity and the New M-Pesa Tariffs." CGAP Blog, 29 August. <http://www.cgap.org/blog/price-sensitivity-and-new-m-pesa-tariffs>
- McCaffrey, Mike, and Annabel Schiff. 2014. "Competition in Tanzania—Fact or Fable?" Digital Finance in the field, 4 June. Helix Institute of Digital Finance. <http://helix-institute.com/blog/competition-tanzania-%E2%80%93fact-or-fable>
- McKay, Claudia, and Peter Zetterli. 2013. "Unintentional Consequences: Branchless Banking in Ghana." CGAP Blog, 3 January. <http://www.cgap.org/blog/unintentional-consequences-branchless-banking-ghana>
- McKee, Katharine, Michelle Kaffenberger, and Jamie M. Zimmerman. 2015. "Doing Digital Finance Right." Washington, D.C.: CGAP. June. <http://www.cgap.org/sites/default/files/Focus-Note-Doing-Digital-Finance-Right-Jun-2015.pdf>
- Morawczynski, Olga. 2015. "Just How Open Is Safaricom's Open API?" CGAP Blog, 30 October. <http://www.cgap.org/blog/just-how-open-safaricom%E2%80%99s-open-api>
- Mulwa, Philip, and Rafe Mazer. 2014. "Is Kenya Ready for an MVNO?" CGAP Blog, 14 July. <http://www.cgap.org/blog/kenya-ready-mvno>
- Musa, Omoneka, Charles Niehaus, and Martin Warioba. 2014. "Is Tanzania Ready for Interoperability in Mobile Money?" CGAP Blog, 15 July. <http://www.cgap.org/blog/tanzania-ready-interoperability-mobile-money>
- Musa, Omoneka, Charles Niehaus, and Martin Warioba. 2015. "How Tanzania Established Mobile Money Interoperability." CGAP Blog, 4 March. <http://www.cgap.org/blog/how-tanzania-established-mobile-money-interoperability>
- Muthiora, Brian. 2014. "Kenya's New Regulatory Framework for E-Money Issuers." Mobile Money Blog, 21 August. <http://www.gsma.com/mobilefordevelopment/kenyas-new-regulatory-framework-for-e-money-issuers>
- Mwaura, Stephen. 2015. Helix Institute of Digital Finance Agent Network Accelerator Survey Launch. Nairobi, 27 May.
- Nyaga, Joseph Kariuki. 2014. "Mobile Banking Services in the East African Community (EAC): Challenges to the Existing Legislative and Regulatory Frameworks." *Journal of Information Policy*, Vol. 4, pp. 270–95. <http://www.jstor.org/stable/10.5325/jinfopoli.4.2014.0270>
- Ochieng, Lilian. 2014. "CAK Orders Safaricom to Open up M-Pesa." *Daily Nation*, 27 July. <http://www.nation.co.ke/business/CAK-orders-Safaricom-to-open-up-M-Pesa/-/996/2399632/-/69n55oz/-/index.html>
- Ouma, Michael. 2015. "Tariffs Key Focus as Safaricom Increases Equitel to Mpesa Transaction Charges." CIO/East Africa. <http://cio.co.ke/news/top-stories/tariffs-key-focus-as-safaricom-increases-equitel-to-mpesa-transaction-charges>

Safaricom. n.d. "Terms and Conditions for the Access and Use of the Safaricom Web Self Care Service," Clause 10.2.

<https://selfcare.safaricom.co.ke/FrontEnd/TermsAndConditionsAction.action;jsessionid=AAD962AB87EE68E26A8C8E3E64B1E59D.jvm4?name=RegisterTermsAndConditions>