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Driving financial inclusion through mobile financial services in Bangladesh: A role for mobile network operators

Prepared for

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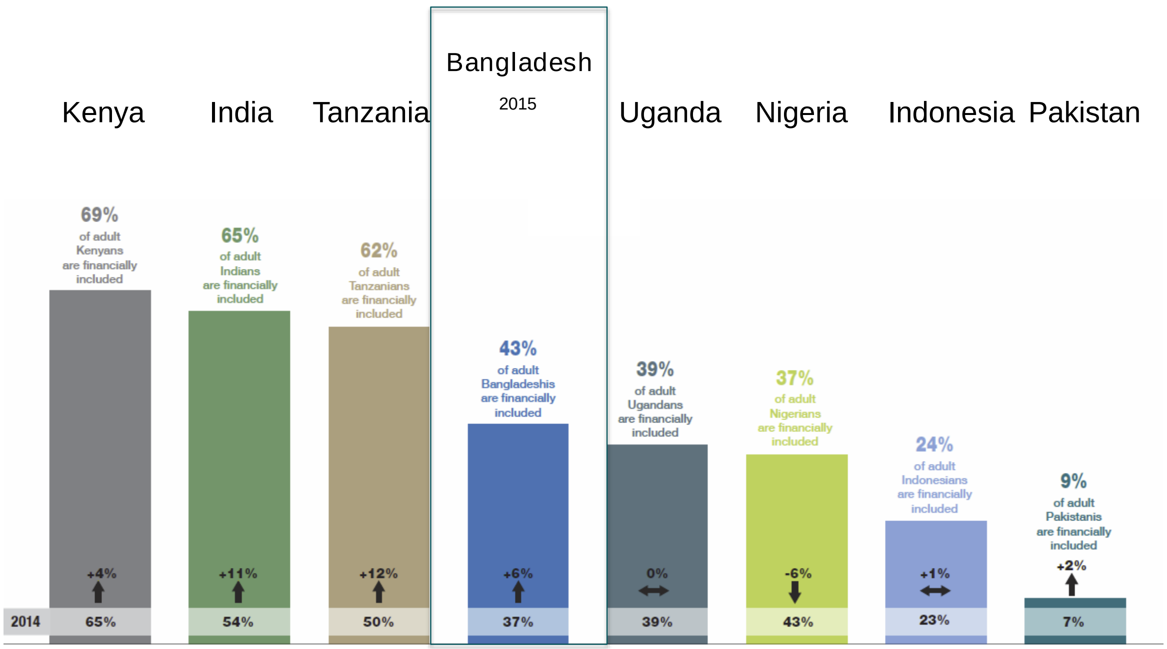
1. Introduction

1.1 MFS for development

Bangladesh is currently engaged in a major push towards digital services, with its Digital Bangladesh forming a key part of its Vision 2021 to become a middle income country by that year. It faces a real opportunity to 'leapfrog' traditional development milestones through digital adoption. The Bangladesh Bank has stated its vision of supporting "rapid broad based inclusive economic growth, employment generation and poverty eradication in Bangladesh."[1] The country faces significant challenges to overcome. As of 2015, of the adult population in Bangladesh:[2]

- 76% live below the poverty line (below US$ 2.50/day)
- 23% live in extreme poverty (below US$ 1.25/day)
- 81% have no bank account
- 43% are gainfully employed

Figure 1. Financial inclusion by country



Source: Intermedia, FII, available at http://finclusion.org/uploads/file/reports/IM%20BRAC%20220616.pdf

With only 43% of Bangladeshi adults considered financially included,[3] there is an urgent need to expand financial inclusion to advance the Bangladesh Bank's goals.

Bangladesh is not alone in confronting this challenge. Improving access to financial services is a major policy objective for many lower income country governments to help their populations lift themselves out of poverty. However, other countries with a high uptake of MFS are achieving higher rates of financial inclusion than Bangladesh (see Figure 1).

The mobile telecommunications ecosystem is a valuable and ready asset that can be leveraged to increase access to and use of financial services, i.e., mobile financial services (MFS). In contrast to Bangladesh's levels of financial inclusion, Kenya's MFS payment system reached 80% of households in Kenya within four years.[4]

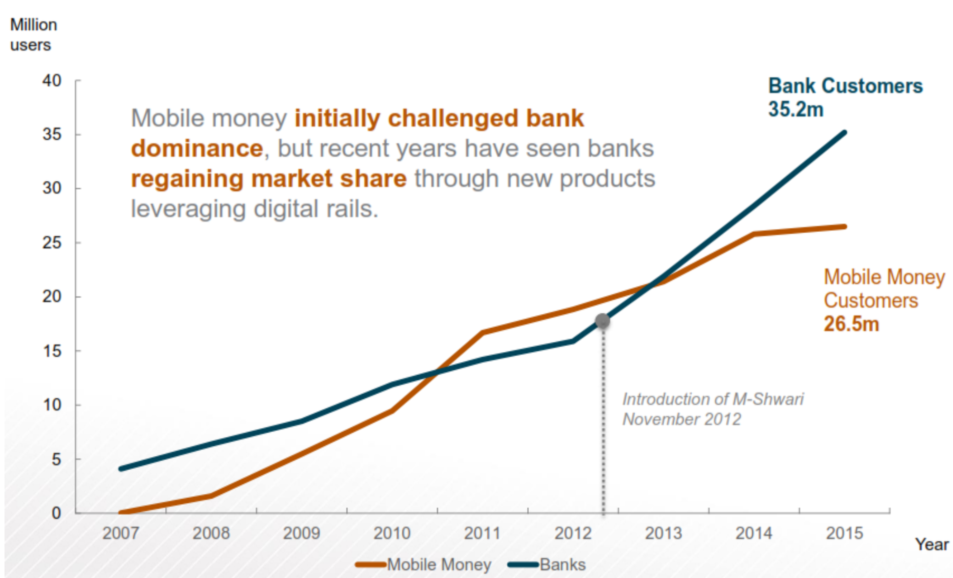
MFS has extensive benefits:

- creating an enabling financial platform for the digital economy
- reaching customers that brick and mortar banks cannot, particularly in rural areas
- improving convenience and speed, and reducing costs, of using financial services
- reducing risk of fraud, money laundering, terrorist finance and other illegal activities

Using the most basic MFS, individuals can use 'mobile wallets' to send remittances, support family members through income shocks and reduce the risk of transferring cash. But such money transfer services are only the beginning of the story. If the MFS sector develops well, efficiency gains can be made from:

- consumers using mobile 'retail payment' services to pay electricity, water and other utilities, schools and merchants bills; and
- businesses and public agencies using mobile 'bulk payment' services to distribute salaries and social payments.

Figure 2. Benefits of MFS to the banking sector in Kenya



Source: CGAP, Digital Finance 2016

Stepping further up the ladder of MFS services, mobile savings, credit and insurance can enable Bangladesh's digital economy to transform the lives of people on low incomes, empowering them to grow their micro and small enterprises, invest in education, manage risk and emergencies, and build stable futures for their families and businesses. This can bring a direct and large boost to the banking sector (see Figure 2).

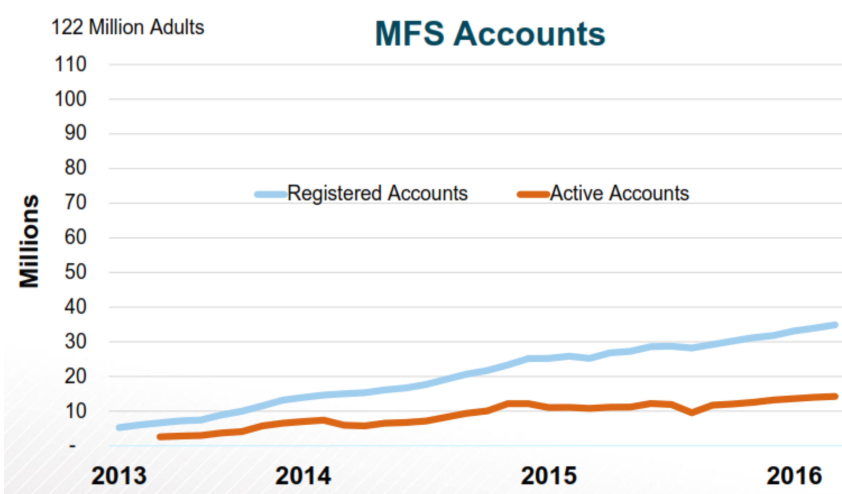
McKinsey Global Institute[5] recently found that 200 million micro, small, and midsize businesses in emerging economies lack access to savings and credit, and appetite for US$2.1 trillion of loans to individuals and small businesses. Governments could reduce leakage of US$110 billion annually in public spending and tax collection.

A carefully designed regulatory framework must align and harness commercial interests of mobile network operators (MNOs) and banks to achieve these public policy objectives. Bangladesh has the opportunity to ensure that the extensive mobile telecommunications ecosystem is put to work as fully as is possible to further financial inclusion and develop Bangladesh's financial services sector.

1.2 MFS in Bangladesh

MFS have grown in Bangladesh since their introduction in 2011. By June 2016, there were 36.2 million registered mobile money users and 13.3 million active accounts (see Figure 3).[6]

Figure 3. Growth in MFS accounts



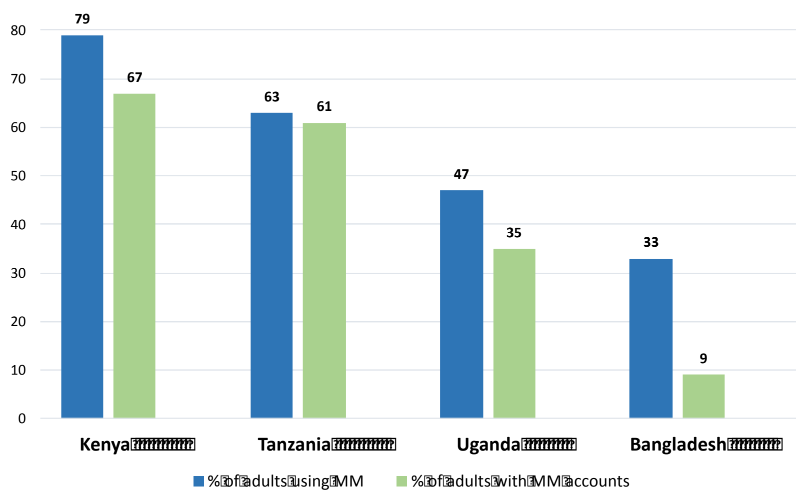
Source: CGAP MFS Bangladesh: 2015 Highlights, available at http://www.slideshare.net/CGAP/mfs-bangladesh-2015-highlights

However, after these first five years, MFS in Bangladesh are still performing significantly below their potential for driving financial inclusion:

- ***Low percentage of adults with accounts:*** Only 9% of Bangladeshi adults have their own mobile money account.[7] Although Bangladesh is well ahead of India in uptake, its potential is far greater. This is illustrated by the levels of uptake in Kenya, Tanzania and Uganda, three leading MFS adopters, where the percentage of adults with mobile money accounts in 2015 was 67%, 61% and 35% (see Figure 4).

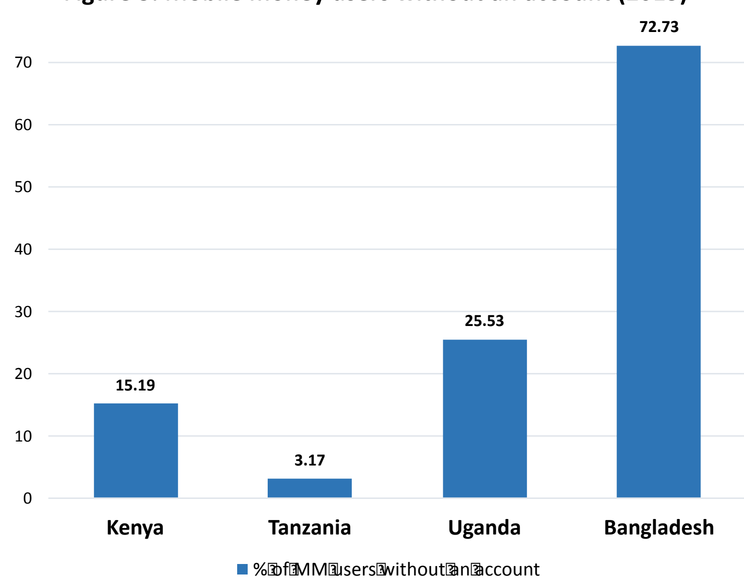
- ***Low rate of usage:*** Of Bangladesh's adult population, 33% used mobile money services but only 8% were active within the last 90 days, indicating a relatively low usage rate. This compares with 79%, 63% and 47% of adults using mobile money services in the countries just mentioned.
- ***Limited scope of usage:*** Bangladeshis also use MFS in a very limited manner, largely via over-the-counter' (OTC) transfers, i.e., requiring agents to send and/or receive the funds for the customer rather than exploiting the full potential of the electronic service. Nearly three-quarters of mobile money users in Bangladesh do not have their own account, compared to 15%, 3% and 25% in Kenya, Tanzania and Uganda, respectively (see Figure 5).

Figure 4. Mobile money usage and account registration (2015)



Source: Derived from data available at http://finclusion.org/data_fiinder/

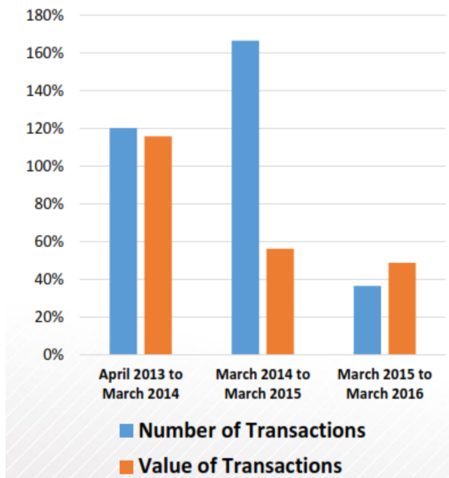
Figure 5. Mobile money users without an account (2015)[8]



Source: Derived from data available at http://finclusion.org/data_fiinder/

In addition, recent studies show that after a 'fast start,' growth in MFS in Bangladesh may be reaching a 'plateau' with the rate of growth in transaction value and volume tapering off (see Figure 6).[9]

Figure 6. Growth in MFS transaction value and volume in Bangladesh



Source: CGAP, (see Figure 3), based on Bangladesh Bank data

Bangladesh's MFS sector has the opportunity to pursue more advanced MFS beyond simple store and transfer functionality of mobile money services, including:

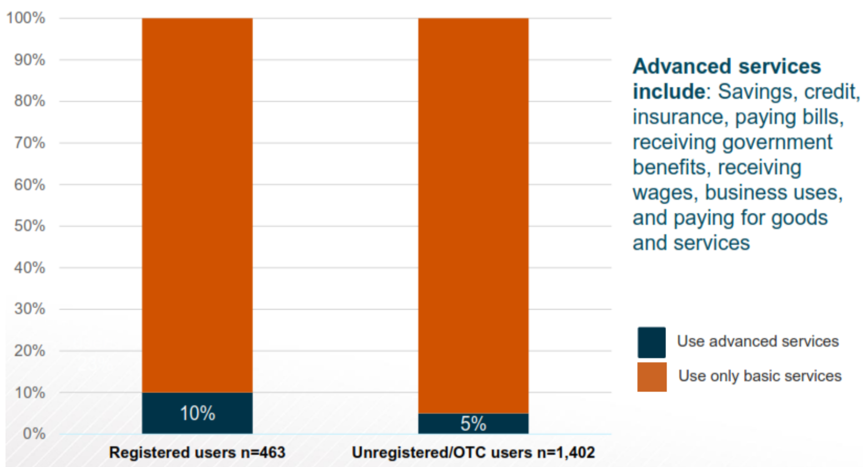
- ***Payment services:*** The markets for services such as retail payment services and bulk payment services have lagged compared with other developing countries (see Figure 8).
- ***Risk-based financial products:*** The market for mobile savings, credit and insurance is yet to take off.
- ***Functionality:*** Only 13% of mobile money account holders have used at least one 'advanced' mobile money function (advanced activities exclude cash-in, cash-out, account management and person to person (P2P) transfers).[10]

The emergence of these advanced MFS has been limited. Put simply, Bangladeshis are yet to have or use the range of financial services that are now common in many other low income countries (see Figure 7 and Figure 8).

Bangladesh's level of performance means that the mobile telecommunications ecosystem is not being used anywhere near to its capability. Mobile networks can accelerate *digital* financial inclusion, with people managing their transactions directly over electronic devices. But this has largely been unexploited, as most mobile money transactions in Bangladesh are OTC transfers.

The lack of user competency in conducting basic mobile money transfers leaves them excluded from accessing more advanced MFS that could have a greater impact on financial inclusion – and from participating in the digital economy. It also prevents the development of mobile money transaction histories that may be useful for the development of credit scoring that enables mobile credit and insurance.

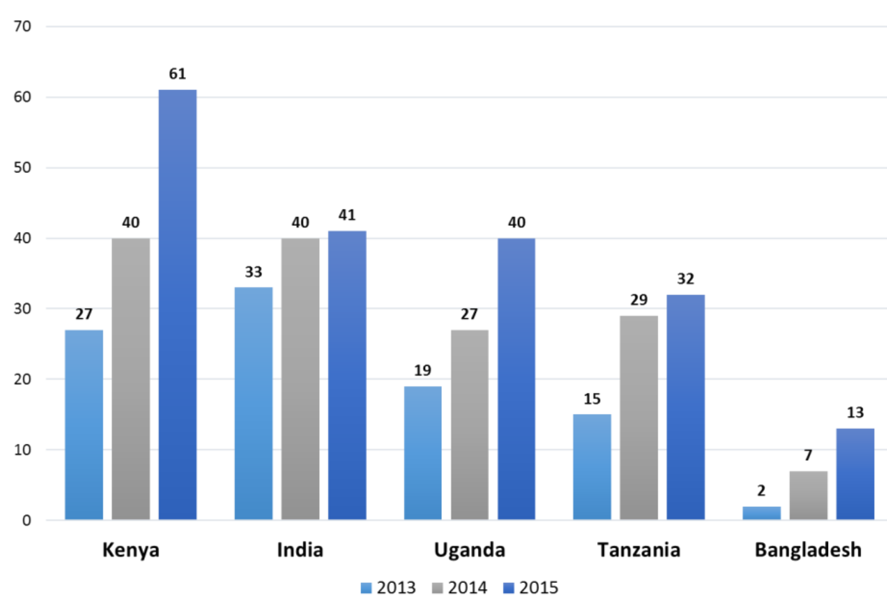
Figure 7. Advanced Financial Services in Bangladesh (2015)



Source: CGAP, MFS Bangladesh: 2015 Highlights, available at http://www.slideshare.net/CGAP/mfs-bangladesh-2015-highlights.

Agent involvement in transactions that could be conducted electronically and autonomously by users imposes unnecessary costs on customers. These include the time and effort of a physical visit to an agent and unnecessary agent fees. It also reduces accountability for use of money transfers, risking fraud and other illegal usage.

Figure 8. Comparison of advanced mobile money function usage by active account holders



Source: Derived from data included in 2015 InterMedia Wave Reports for each country, available here: http://finclusion.org/reports/

As discussed next, competition in MFS is a key driver of performance, and it is essential to ensure that those with useful assets, operations, relationships and expertise have an opportunity and interest in putting them to work for MFS.

2. Improving performance

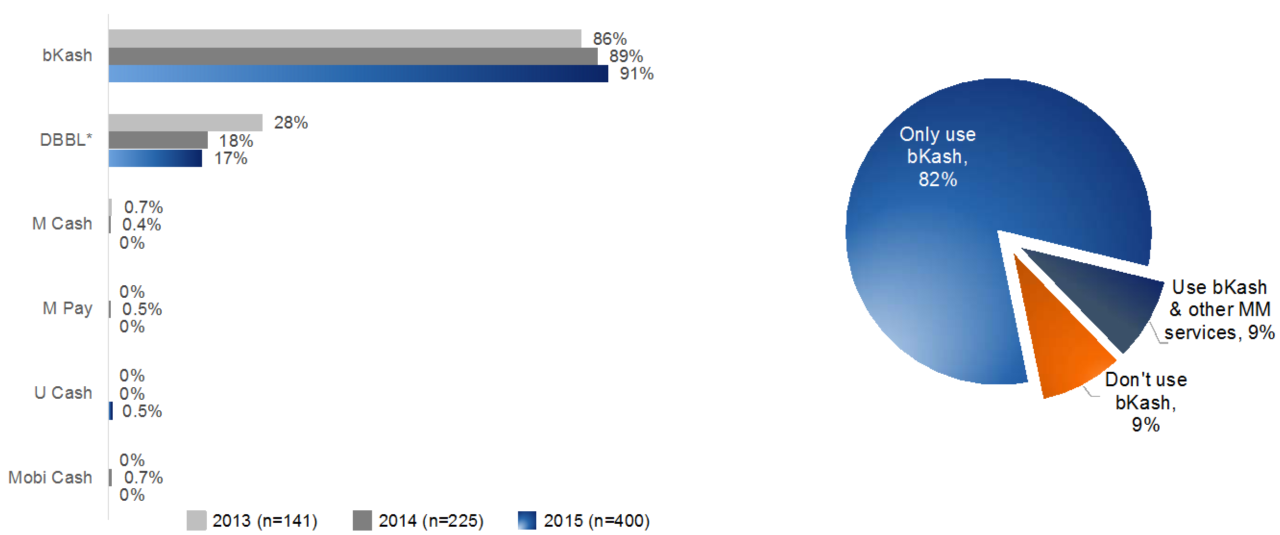
2.1 Increasing competition

As in any sector where services are provided predominantly by regulated private entities, performance is improved if the regulatory framework aligns commercial opportunity with delivery of a public good. Ensuring a competitive market is crucial to achieve this. Effective competition in MFS can improve the quality and diversity of services, lower prices and increase consumer welfare, thereby promoting financial inclusion.[11]

In the early years of MFS, markets are often quite concentrated due to the first mover advantage conferred by 'network effects.' However, there is a high risk that a lead MFS provider can obtain such a hold on the market that it becomes almost impregnable to competition. Its advantage is often reinforced by the lack of interoperability between accounts of different providers.[12] In this context, unnecessary regulatory barriers to entry and other factors may limit competition and risk the entrenchment of dominant players.

As of June 2016, 29 banks and bank-owned MFS providers have been approved to provide MFS with 19 actively offering these services in Bangladesh.[13] Despite the large number of service providers, the market is dominated by one player, bKash, a subsidiary of BRAC Bank Limited.

Figure 9. Mobile money usage in Bangladesh by provider among active account holders



*The percent of adults actively using their DBBL accounts is constant across years at approximately 1 percent of the total population.
Active mobile-money account holders can have accounts with more than one provider.

Source: Financial Inclusion insights, Bangladesh Wave Report FII Tracker Survey, January 2016

Demand-side studies have found that in 2015, 91% of active mobile money account holders used bKash and 82% used bKash exclusively. Of active account holders, only 17% used competitor service DBBL, but the remaining services were virtually unused (see Figure 9).

The mobile telecommunications market in Bangladesh has a more competitive dynamic among the top three MNOs. Grameenphone leads with a 43.32% market share (although its market share in revenues is higher), followed by Bangalink at 24.31% and Robi at 20.89%.[14]

The extremely highly concentrated market for mobile money services strongly suggests an absence of competitive forces within the market. A lack of vibrant competition among providers is likely to result in weaker efforts to acquire customers and generate usage, higher prices, lower diversity of services, poorer quality, and less innovation.[15]

Countries are increasingly recognising and addressing competition problems in MFS where individual providers have become dominant. They are looking at how best to ensure a diversity of providers that will take up the mantle of innovation carried thus far by the first movers.[16]

In Bangladesh, the Draft MFS Guidelines released in 2015 proposed strict limits on ownership that would require MFS providers to have a several owners of different types, thus increasing diversity at the *shareholder* level. However, this is unlikely to tackle the concentration in the sector, and merely increases transaction costs and weakens investment opportunities. Instead, diversity at the *provider* level is required, permitting a wider set of entrants to compete effectively under secure regulatory conditions.

As discussed next, enabling competition depends on ensuring that those who are well positioned to contribute to MFS can do so to the fullest extent possible, and have a commercial interest in doing so.

2.2 Leveraging mobile telecommunications for financial inclusion

MNOs have a combination of assets, operations, relationships and experience that is extremely valuable when it comes to driving financial inclusion. These are underutilised where regulatory frameworks significantly limit the opportunity to put them to work in providing MFS.

Innovation-oriented approach

The fact that Bangladesh's MFS sector has not yet developed beyond money transfers (and even that is largely restricted to OTC transactions) suggests a major lack of competitive drive to diversify products. This impedes development of the digital ecosystem, which depends on the circulation of digital money. It also means that Bangladeshis do not enjoy the benefits of numerous services that could be made available to them. For example, a more competitive MFS sector would bring schools, utilities and other payees into the system so that consumers can pay fees easily with charges at competitive rates. Increased competition would similarly make bulk payments possible, for example for salary and social payments to large numbers. MNOs are very practised in introducing and marketing new products to increase usage of their networks, and – if allowed a larger stake in the growth of the MFS sector – could bring innovation to bear for the benefit of Bangladeshi consumers.

Nationwide telecommunications and agent networks

MNOs have invested in extensive wireless communications infrastructure that affords them wide geographic coverage that is readily usable to deliver MFS to customers wherever they can access a mobile signal. This reaches into rural areas where banks have still not reached with bricks and mortar branches or agents.

In addition, MNOs have established retail agent networks, which they already use to deliver a variety of retail electronic communications services to their customers. These range from account registration and airtime top-ups to sales of physical devices. Such agent networks can easily be leveraged for MFS, expanding services to cash-in, cash-out and payment services.

Today in Bangladesh, banks providing MFS are able to access the telecommunications infrastructures of MNOs to deliver their services to consumers through USSD. Banks can also access the agent networks of MNOs to provide cash-in, cash-out and account registration services. However, in both cases, this access is limited to an arms-length transactional relationship. As MNOs are unable to reap a significant share of the rewards from MFS, they have little incentive to invest in these networks to enable and improve MFS delivery. If MNOs had greater upside in successful delivery of MFS, including through ability to form a joint venture arrangement with a bank, they would have far stronger motivation to innovate and modify their physical and agent infrastructure to accommodate MFS and ensure tighter integration with financial service providers.

Existing customer relationships

A large customer base is essential for success because 'network effects' increase the utility of the service as the number of customers increases. A large customer base is also essential to attract agents (who earn commissions from customer transactions) to the system, just as the ubiquitous presence of agents is necessary to attract customers. This is commonly referred to as a 'two-sided market.' Yet many potential customers who are financially excluded are difficult to reach. They may be unbanked, reside in remote or rural areas, or lack familiarity with digital products.

To this challenge, MNOs bring vast established customer relationships with the very same people that are potential MFS customers. The MNOs know who these customers are, where they reside, already have a service-provider relationship with them, and have a means of communicating with them through the agent network and directly through their mobile devices. MNOs now have to verify their customers' identities biometrically, contributing to the development of identification that is so essential to financial inclusion.

These customers already make payments to MNOs for airtime and other products, which increases the familiarity of agent-based financial transactions. One of the most rapid ways to increase the number of MFS accounts, and the ease of usage, is for MNOs to make them available directly to their existing and new telecommunications customers.

In Bangladesh, there is currently a huge gap between mobile phone and MFS usage. In 2015, 64% of Bangladeshi adults own and 96% had access to a mobile phone. By contrast, only 9% of Bangladeshi adults had a registered mobile money account, and 33% had used mobile money services.[17] Shown another way, as of June 2016, there were over 131 million mobile subscriptions in Bangladesh, a country with a population of around 160 million. Even accounting for multiple mobile subscriptions by customers, a large percentage of the population has an existing relationship with an MNO. By contrast, as of June 2016, there were only 36.2 million registered mobile money accounts and 13.3 million active accounts.[18] Clearly there is room to close this gap and exploit the synergy between phone and MFS usage.

However, one constraint on MFS account registration is the limited ownership of phones. Nearly everyone with a registered MFS account also owns a mobile phone, suggesting that mobile phone ownership is critical to MFS account use (as opposed to OTC use).[19] MNOs have the potential to increase mobile phone ownership and MFS account registration by offering promotions and marketing plans that encourage uptake of both.

Again, this is a question of ensuring that the MNOs have a strong commercial interest in putting their assets, operations, relationships and experience to work for MFS.

Established KYC systems

Crucially important in safeguarding the security of MFS is an effective KYC system. MNOs today have extensive KYC procedures, extending to biometric identification and ID, physical address and other data on each customer. This KYC system can be leveraged quickly and securely for KYC in MFS, thereby strengthening security and reducing the costs and time involved in 'onboarding' customers to the financial system. Bangladesh's new KYC system enables a shift from paper to digital KYC, making it far more reliable and efficient to bring customers on board.

Marketing and branding expertise and channels

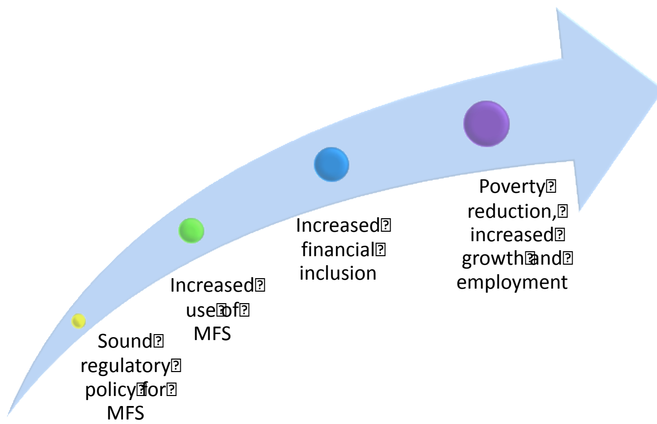
Unlike banks, which have traditionally limited their marketing to areas where they have brick and mortar branches, MNOs have extensive expertise in and established channels for marketing their services, including in product design, promotion and advertising. MNOs also have strong brand recognition as major national businesses. This and their user-oriented attitude positions them well to tailor and market products to user needs, overcoming current lack of appreciation in the population of the utility of mobile financial services.[20] It also strengthens customer awareness and trust. This expertise and these channels can be immensely useful in spreading financial inclusion where MNOs have a strong commercial interest in doing so.

Greater MNO involvement in MFS can help to reduce the high reliance on OTC transactions. One in five OTC users in Bangladesh say they use OTC (as opposed to registering to send money themselves) because using an MFS account is difficult.[21] Supporting this finding, other studies have found that mobile wallet transactions in Bangladesh often require five or more steps and involve menus that are difficult to navigate, resulting in sessions that time out.[22] Here, MNOs could play a transformative role in making the market far more consumer-oriented. MNOs have a long history of introducing customers to new mobile services through marketing and education campaigns, presenting the services in a user-friendly interface and providing support for the use of these services. If MNOs had a greater stake in the uptake of MFS, they would be more likely to develop innovative solutions to increase usage of MFS accounts.

3. Modernising the regulatory framework for secure growth

A number of factors affect the growth of MFS. It is widely recognised that regulatory policies have an important impact on uptake of services (see Figure 10).[23] Where competition is constrained and the mobile telecommunications ecosystem is underutilised, some targeted adjustments to Bangladesh's MFS regulatory framework would align MNOs' incentives to put their assets, operations, relationships and expertise to maximal use for financial inclusion purposes.

Figure 10. Sound MFS regulatory policy leads to economic benefits



3.1 Beyond the 'bank-led' versus 'MNO-led' legacy

Under the current MFS regulatory framework in Bangladesh, competition has been restrained by regulatory barriers to entry. In the early days of MFS, policy makers and academics debated and contrasted 'bank-led' models with 'MNO-led' models:

- Advocates of 'bank-led' models emphasised that banks had deep experience providing financial services, complying with prudential regulations, maintaining the security and integrity of financial systems and minimizing the incidence of fraud, money laundering and terrorism finance.
- Advocates of 'MNO-led' models decried the slow pace and high costs of traditional banks and their inability to develop, market and deliver digital services to populations beyond the reach of brick and mortar branches. They emphasized MNOs' expertise in delivering digital services to remote, rural and low-income populations.

This dichotomy of regulatory frameworks is now an obsolete anachronism. It is now widely understood that MFS synthesizes elements of banking, payments and other financial services with telecommunications. For even the most basic MFS (e.g., storing and transferring money), banks and MNOs are both essential. Telecommunications channels are required to communicate with and deliver services to customers who are also customers of the MNOs. Banks or other financial institutions are needed at the very least to hold protected cash balances corresponding to aggregate amounts in customer mobile money accounts.

The interrelationship of banks and MNOs in MFS has become increasingly nuanced in many countries in recent years – sometimes competitive, other times symbiotic. The banking sector stands to benefit as more money is introduced into the banking system, whether directly or through mandatory deposits in bank accounts to match customer mobile money accounts. The relationship between MNOs and banks has played out in a number of ways in diverse MFS markets:

- Numerous countries around the globe with successful MFS markets, including Brazil, Kenya, Peru, Philippines and Tanzania, have established distinct regulatory categories for bank and MNO mobile money issuers (known by various names, including, e-money issuers, mobile payment service providers, payments institutions, etc.). These new regulatory categories bring service providers directly under the regulatory control of the financial services regulator but with a lighter regulatory burden than is required for banks. Myanmar[24] and Sri Lanka[25] recently permitted non-banks to become certified to provide mobile financial services.
- The Reserve Bank of India, which had previously restricted MFS to banks, recently created a new category of licensed banking service provider, the "payment bank." Payment bank licenses are open to MNOs and other non-banks, enabling them to issue mobile money and provide transfer and payment services.
- Pakistan, which embraces the bank-led model, expressly allows for joint ventures between banks and MNOs. Market leader Easypaisa was launched when Telenor Pakistan, an MNO, purchased a 51% ownership stake in Tameer Bank, a microfinance bank.
- In Zimbabwe, Econet, an MNO, acquired Steward Bank to serve as implementing partner of its Ecocash mobile money platform.
- In Kenya, Equity Bank obtained a mobile virtual network operator (MVNO) license and launched its own telecom network principally to deliver MFS to its customers. The strategy was so successful it recently announced plans to expand the practice to five other African markets in which it operates as a bank.[26]
- In Tanzania, banks rely on mobile money services provided by MNOs to enable bank account holders to access their cash deposits. For the banks, it is more economical to encourage transfers to mobile money accounts with MNOs (which customers can cash out through mobile money agents) than to invest in expensive ATM networks, especially in remote areas.
- In more mature MFS markets, banks and other financial institutions have become critical to the development of what can be considered "second generation" MFS. For example, in Kenya and Tanzania, standard bearers of the MNO-led model, MNOs have entered into partnerships with commercial banks and other financial institutions to deliver mobile savings and mobile credit services to their mobile money customers.
- In Uganda, MNO mobile money issuers are not directly licensed but operate in partnership and under licensed banks. Although this permits MNOs a significant role, it impedes their ability to innovate and undermines the directness of regulatory control, for example as bank partners must serve as an intermediary with the regulator.

In short, policymakers and regulators, as well as MFS market participants, have recognized the benefits of allowing banks and MNOs to both compete with and complement one another. In markets across the globe they continue to grapple with setting the right level of involvement of these two entities to maximize success of MFS while limiting risks to the financial system, ensuring a competitive marketplace and protecting consumers.

Bangladesh's regulatory framework effectively restricts permissions to institutions that are already regulated as banks by the Bangladesh Bank. The role of MNOs in MFS has been severely limited by the Bangladesh Bank to the provision of third-party agent networks and access to telecommunications channels to bank-owned MFS providers. In practice, the Bangladesh Bank has not approved any MFS provider with significant ownership interests held by MNOs.

This gives MNOs very little commercial incentive to put their strengths to work for MFS. A greater role, whether providing MFS services directly themselves or in joint ventures with banks, would enable a more competitive market for MFS and improve Bangladesh's MFS performance.

3.2 Prudential regulation

A number of key regulatory areas must be addressed to ensure the security of the MFS system, as well as to ensure it operates on a level playing field. To the extent that MNOs are permitted to play a greater role and reap benefits of their investments, some controls may be appropriate given the key position they occupy as providers of the telecommunications service that carries the services.

Increasingly, it is recognized that financial services should be regulated according to their nature and the risks they present and not how businesses are classified under legacy regulatory frameworks. The Bank of International Settlements has stated that "regulation should be designed by type of service"[27] and not according to whether the core business of the MFS provider or its shareholders are banks, MNOs or something else.

Some basic MFS do not create significant systemic risk, but need certain key protections. For example:

- ***Conversion of cash to electronic money*** (cash-in) depends on proper authentication of the cash, identification of the customer, and a reliable book keeping system.
- ***Storage of money*** for safe keeping (instead of keeping it 'under the mattress') depends primarily on the same things, as well as control over access to the funds, making governance, audits and KYC procedures key to ensure the integrity of the system.[28]
- ***Transfers and payment services*** require documentation of the delivery to and transfer by the network, authentication of the recipient, and so rely on internal messaging and control protocols to protect against fraud and system failure. Prevention of terrorism finance and money laundering may also justify limiting the amounts that may be transferred, requiring certain record keeping, and identification of the sender.

All of these are crucial, but they can all be provided without the credit, market or liquidity risk associated with full 'banking' services. Because the risks of investing are not present in the mere provision of mobile money transfer and payment services, many of the prudential regulations applicable to banks are therefore not necessary or relevant to such services. Market conduct regulation may suffice to protect consumers and support trust in such services through transparency and disclosure requirements, standards for informing customers of the balances held and transactions carried out, and audit requirements.

Successful financial inclusion policy requires regulation to be well-suited and proportionate to the risks involved in the activities of the service provider. Adopting a better targeted licensing regime to widen the range of regulated firms that may provide such services could be expected to improve Bangladesh's MFS sector.

3.3 Safeguarding user funds

A key feature of the regulatory regime must be to ensure the security of user funds. Under the current MFS Guidelines, banks are required to ensure that the balance in bank books are equal to the virtual balance of all registered mobile accounts in the system. This should be maintained, and indeed there is no reason to think that an increased role for MNOs in Bangladesh's MFS sector would in any way weaken compliance with such requirements.[29]

3.4 Protecting against fraud, terrorism finance and money laundering

Another key regulatory objective must be to strengthen protections against fraud, terrorism finance and money laundering. The current MFS Guidelines have extensive requirements to address this, including requiring compliance with AML and CFT-related laws and extensive KYC requirements. Greater MNO stake in MFS would help to enhance these protections due to MNOs' relationships with their customers and the KYC procedures they follow, including biometric identification and SIM card registration.

For example, India's Ministry of Telecommunications issued an order in 2016[1] requiring mobile operators and their agents, when carrying out KYC due diligence, to sign into the Unique Identity Authority of India (UIDAI) database to obtain customers' digitally signed, biometric, electronic KYC data and Aadhaar numbers from the UIDAI database.[30] Similarly, the State Bank of Pakistan has recently embraced the use of biometrically verified SIM cards as part of a larger move toward biometric verification for mobile wallet registration.[31] The July 2016 revisions to Pakistan's Branchless Banking Regulations allow the lowest level mobile wallet accounts to be opened remotely (i.e., not at a branch or through an agent) utilizing such SIM cards.[32]

In terms of security threats, MFS providers have held up well in the many countries where they operate. It is the traditional systems that appear to be most vulnerable to attack, as seen in the cyber heist on Bangladesh Bank itself. MNOs can play a key role in protecting against economic crimes and cyber security.[33] The ability to track funds transfers electronically over the mobile telecommunications networks greatly strengthens efforts to prevent fraud, terrorism finance and money laundering.

3.5 Interoperability

It is now widely recognised that interoperability between MFS accounts is vital to allow competition to evolve, even if there are differences of opinion on how to introduce it. Where interoperability is not in place between MFS providers (or where charges for transactions between MFS providers are high),

[1] File No 800-29/2010-VAS, dated 16 August 2016, on Use of 'Aadhaar' e-KYC service of Unique Identity Authority of India (UIDAI) for issuing mobile connections to subscribers.

alternative providers cannot build market share after the first provider has attracted a critical mass of customers. Mobile money markets therefore face a 'winner takes all' outcome resulting from 'competition for the market.' [34]

For the Bangladesh MFS market to increase its competitiveness, account-to-account interoperability will become necessary. There are various ways in which interoperability can be introduced. In markets that are not dominated by a single provider, it may be voluntarily negotiated as in Indonesia, Pakistan, Peru and Tanzania. In Bangladesh, interoperability with bKash and the National Payments Switch will be crucial, and this will likely need regulatory intervention to be effective. This could be achieved in a number of ways, including by having a third party create a platform that allows for interoperability among MFS providers or directly allowing MFS providers to utilize the National Payment Switch.

3.6 Preventing abuse of control over network access

There may be perceived concerns that allowing MNOs a larger stake in MFS provision might lead to anticompetitive tactics. MNOs could seek to exclude competitor MFS providers from the market through discriminatory treatment, denying them access to the USSD services over their telecommunications networks, or charging prices so high as to render competitors' 'downstream' MFS services uneconomic (economists refer to this as a 'margin squeeze'). Such problems have indeed occurred in some countries, such as Kenya, Uganda and Zimbabwe whose markets are each dominated by a single MNO.

Such network access problems, if they ever arise, can be effectively controlled. Some regulatory oversight could be considered if necessary to avoid abusive pricing in Bangladesh. For instance, if harm to competition exists or is demonstrably probable, access to USSD should be priced to allow recovery of costs for use of this network resource and permit prudent investments for improvements to accommodate high levels of use. Session-based pricing, which is tied to actual use of USSD, might be considered as an alternative means of pricing USSD access than revenue sharing or other arrangements that might not be linked to the extent the network is used.

Regulators can treat USSD access as a typical telecommunications interconnection and access issue, which telecommunications regulation addresses in most countries, including Bangladesh. Remedies include effective systems for monitoring and enforcing non-discrimination obligations and preventing anticompetitive effects. The Bangladesh Bank in its Draft MFS Regulations proposed that MNOs' right to take minority interest in MFS providers would be conditional upon providing 'reliable telecommunications access', an entirely reasonable approach. To bolster this, MNOs with market dominance could be required to report on equivalence of treatment of different MFS providers using their networks.

Generally, competition problems are unlikely where MNOs are permitted a larger stake given that at least two successful bank-led MFS providers enjoy huge first mover advantages, which would provide robust competition to any MNO active in MFS. Indeed, studies show that where MNOs are permitted a significant stake in the MFS sector, competition in this sector tends to track the evolution of the mobile telecommunications business.[35] There is no reason to expect that allowing MNOs to take a larger stake in the MFS sector would reduce competition.[36]

4. Conclusion

Bangladesh has come a long way since introducing MFS in 2011, but its contribution to financial inclusion has not performed nearly as well as it could. The MFS market lacks effective competition. The mobile telecommunications ecosystem is not being put to full use for MFS, as too few people use the services, and when they do the kind of use they make of it is very limited in scope.

The evolution of the sector can be transformed by enabling effective competition, allowing MNOs a greater role in the sector that gives them a commercial interest to put their assets, operations, relationships and expertise to work for MFS. This means updating Bangladesh's regulatory framework to reflect widely recognised lessons, a practice which has been shown to have a marked impact on performance in other countries.[37] The 'bank-led/MNO-led' dichotomy is no longer relevant or useful as both kinds of institutions have a variety of possible roles. The perceived risks from allowing MNOs to provide MFS services themselves or have a greater stake, including through forming joint ventures with banks, in MFS providers, are easily addressed.

Updating its MFS regulatory framework will be a key element in meeting Bangladesh's objective to bring its population out of poverty and become a middle income nation by 2021. If it takes this opportunity, it will unleash the potential for MNOs to drive growth in MFS and build these services into a financial platform for a thriving digital economy.

About Macmillan Keck

Macmillan Keck is a law and consulting firm, based in Geneva and New York City, focused on ICT and digital financial services. The firm is currently carrying out a statutory market inquiry into competition in banking sector in Kenya for the Competition Authority of Kenya (CAK), recently carried out a statutory market inquiry for the CAK into use of telecom platforms for digital financial services, and is also currently carrying out a review of USSD and SMS telecom platforms for digital financial services in Uganda for the Ugandan Communications Commission (UCC). It is also evaluating the regulatory regime for mobile financial services in a European country for a European government. Macmillan Keck also worked recently with the University of Johannesburg's Centre for Competition, Regulation and Economic Development (CCRED) reviewing competition bottlenecks in mobile financial services in Tanzania, Uganda and Zimbabwe, funded by the Bill & Melinda Gates Foundation. Rory Macmillan, partner in the Geneva office, is author of one of the most comprehensive studies of regulatory and competition issues in mobile financial services, Digital Financial Services: Regulating for Financial Inclusion, which he presented to the ITU's Global Dialogue on Digital Financial Inclusion, part of its Global Symposium for Regulators in Sharm el-Sheikh in May of 2016. More information is available at www.macmillankeck.pro.

[1] https://www.bb.org.bd/aboutus/bbinb_dtl.php

[2] Financial Inclusion insights, Bangladesh Wave Report FII Tracker Survey, Conducted August-September 2015, January 2016, available here: http://finclusion.org/uploads/file/reports/2015%20InterMedia%20FII%20BANGLADESH%20Wave%20Report.pdf

[3] 19% have full service bank accounts, 24% have accounts with non-bank financial institutions, and (according to demand-side data) 9% have a mobile money account. See Financial Inclusion insights, Bangladesh Wave Report FII Tracker Survey at footnote 2.

[4] World Bank, 2016 World Development Report, p95

[5] McKinsey Global Institute, Digital Finance for All: Powering Inclusive Growth in Emerging Economies, September 2016.

[6] https://www.bb.org.bd/fnansys/paymentsys/mfsdata.php

[7] Financial Inclusion insights, Bangladesh Wave Report FII Tracker Survey, Conducted August-September 2015, January 2016, available here: http://finclusion.org/uploads/file/reports/2015%20InterMedia%20FII%20BANGLADESH%20Wave%20Report.pdf

[8] Percentage of adult MM users without an account calculated as follows: ((% of adults using MM) – (% of adults with MM accounts)) / ((% of adults using MM)

[9] Kaffenberger, M. (2016) 'Mobile Money in Bangladesh Plateaus after Fast Start,' CGAP Blog, 17 August, available at http://www.cgap.org/blog/mobile-money-bangladesh-plateaus-after-fast-start?utm_source=Blog+newsletter+8.18&utm_campaign=blog_newsletter_081816&utm_medium=email

[10] Financial Inclusion insights, Bangladesh Wave Report FII Tracker Survey, Conducted August-September 2015, January 2016, available here: http://finclusion.org/uploads/file/reports/2015%20InterMedia%20FII%20BANGLADESH%20Wave%20Report.pdf

[11] Mazer, R. and Rowan, P. (2016) 'Competition in Mobile Financial Services. Lessons from Kenya and Tanzania.' CGAP

[12] Bourreau, M. and Valletti, T (2015) "Enabling Digital Financial Inclusion through Improvements in Competition and Interoperability: What Works and What Doesn't?" CGD Policy Paper 065, Washington DC: Center for Global Development at 14, available at http://www.cgdev.org/sites/default/files/CGD-Policy-Paper-65-Bourreau-Valletti-Mobile-Banking.pdf

[13] https://www.bb.org.bd/fnansys/paymentsys/mfsdata.php

[14] http://www.btrc.gov.bd/content/mobile-phone-subscribers-bangladesh-june-2016

[15] In addition, this market concentration has spill-over effects into related MFS markets. For example, in more mature MFS markets the customer transactional data compiled by mobile money services providers has proven essential for the development of mobile credit services. Mobile credit providers are able to issue short-term microloans to underserved populations via mobile devices without the need for prior credit history or any prior relationship with a financial services institution. Often these loans are used to finance the needs of small businesses, such as merchant inventory purchases. Credit evaluation relies on proprietary algorithms that analyse mobile money transactional data. In a highly concentrated mobile money market, this data is often in the exclusive control of a single provider allowing it to extend its dominance in mobile money services into other markets like microcredit.

[16] Several countries with dominant MFS providers are also unlocking markets by prohibiting exclusivity of agent networks, ensuring access to the telecommunications network platform, and increasingly seeking to ensure interoperability among MFS providers. In Indonesia, Mexico, Pakistan, Peru and Tanzania, the MFS providers have voluntarily established account-to-account interoperability.

[17] Financial Inclusion insights, Bangladesh Wave Report FII Tracker Survey, Conducted August-September 2015, January 2016, available here: http://finclusion.org/uploads/file/reports/2015%20InterMedia%20FII%20BANGLADESH%20Wave%20Report.pdf

[18] http://www.btrc.gov.bd/content/mobile-phone-subscribers-bangladesh-june-2016 and https://www.bb.org.bd/fnansys/paymentsys/mfsdata.php

[19] Kaffenberger, M. (2016) 'Mobile Money in Bangladesh Plateaus after Fast Start,' CGAP Blog, 17 August.

[20] Recent research suggests that most Bangladeshis do not use mobile money services because the 'do not need it.' See CGAP, MFS Bangladesh: 2015 Highlights, available at http://www.slideshare.net/CGAP/mfs-bangladesh-2015-highlights.

[21] See Kaffenberger at footnote 19.

[22] See Kaffenberger at footnote 19.

[23] Evans, D. and Pirchio, A. (2015) 'An Empirical Examination of Why Mobile Money Schemes Ignite in Some Developing Countries but Flounder in Most', Coase-Sandor Institute for Law and Economics Working Paper no 723 at 4.

[24] Central Bank of Myanmar, Regulation on Mobile Financial Services (FIL/R/01/03-2016) March 30, 2016

[25] Payment Cards and Mobile Payment Systems Regulations No. 1 of 2013

[26] https://www.telegeography.com/products/commsupdate/articles/2016/07/11/mvno-monday-a-guide-to-the-weeks-virtual-operator-developments/

[27] Dittus, P. and Klein, M., 2011, *BIS Working Papers, No 347*, On harnessing the potential of financial inclusion.

[28] Makin, P, 2009, *Regulatory Issues Around Mobile Banking*, OECD.

[29] To the extent that MNOs are able to own a large minority interest in a bank subsidiary or partner with a bank, banks would have the same obligations for safeguarding user funds. Even in Kenya and Tanzania, where MNOs themselves are MFS providers, the MNOs are required to – and do – keep all user deposits in designated trust accounts held at one or more licensed banks approved by the respective central bank. Accordingly, more active MNO involvement should not affect the safety of user funds.

[30] File No 800-29/2010-VAS, dated 16 August 2016, on Use of 'Aadhaar' e-KYC service of Unique Identity Authority of India (UIDAI) for issuing mobile connections to subscribers.

[31] See, https://www.cgap.org/blog/unlocking-financial-inclusion-using-biometrically-verified-sims

[32] See Section 4.2 of the Branchless Banking Regulations, revised 16 July 2016, available here: http://www.sbp.org.pk/bprd/2016/C9-Annx-A.pdf

[33] Chatain, P. L., A. Zerzan, W. Noor, N. Dannaoui, and L. De Koker. 2011. Protecting Mobile Money against Financial Crimes: Global Policy Challenges and Solutions. Washington, DC: World Bank

[34] Bourreau, M. and Valletti, T (2015) at 14.

[35] Evans, D. and Pirchio, A. (2015) 'An Empirical Examination of Why Mobile Money Schemes Ignite in Some Developing Countries but Flounder in Most', Coase-Sandor Institute for Law and Economics Working Paper no 723 at 28.

[36] For example, in Kenya, where such discriminatory, exclusionary practices have occurred, Safaricom is dominant in the market for mobile telecommunications with a market share of subscriptions at about 70% but a share of revenues estimated at between 80-90%. In contrast, in Tanzania, no MNO in Tanzania is dominant. Market shares by subscriber in early 2016 were approximately Vodacom (35%), Tigo (30%), Airtel (30%). Each of these MNOs has been able to establish a competitive MFS business, with approximate market shares by subscriber in early 2016 at Vodacom (38%), Tigo (33%), Airtel (27%).

[37] See CGAP, Digital Finance 2016.