

# Microfinance and Mobile Banking: The Story So Far

Late one night in November 2007 Aleksandr Kalanda, chief executive officer of Opportunity Bank in Malawi, sat in his office reviewing strategic plans for 2008.<sup>1</sup> The commercial microfinance bank had doubled in size once again in 2007, and now had more than 150,000 customers.<sup>2</sup> In a country where 80 percent of the people live in rural areas with little infrastructure, Opportunity Bank knew that traditional models of microfinance would not bring scale fast enough. The bank had already used technology to develop alternative distribution channels like biometric automated teller machines (ATMs), mobile vans, and kiosks in marketplaces equipped with point-of-sale (POS) devices.<sup>3</sup>

As Kalanda pondered the bank's plans, he decided that these initiatives were not enough. Every Opportunity Bank branch was already congested with customers from the moment the doors opened until they closed. New branches were taking too long to break even, up to 18 months, due to the high costs of building materials and training staff. Kalanda had heard about the enormous success of M-PESA in Kenya, and he saw mobile phone banking (m-banking) as the way forward. Mobile banking is the delivery of financial services outside conventional bank branches using mobile phones and nonbank retail agents. M-banking could allow the bank to serve existing customers better and reach new customers. Meetings with the national mobile network operators (MNOs) suggested that they were not planning to bring an m-banking service to Malawi in the short term. Building a service from scratch would be challenging, but Opportunity Bank already had experience with complex technology projects. After some deliberation, Kalanda finally decided to dedicate significant resources for developing an m-banking channel in the strategic plan.

Many microfinance institutions (MFIs) globally are facing the same challenges Opportunity Bank faced. In the past decade or so, they have experimented with alternative delivery channels to reduce costs, facilitate greater outreach to hard-to-reach areas, and increase

customer convenience. In theory, mobile phones could be used to reach many more customers at a lower cost than any existing delivery channel. Yet despite this potential, in the vast majority of countries there is not yet an existing m-banking service that MFIs can leverage. M-banking to date has largely been driven by MNOs and, to a lesser extent, by some large banks. MFIs have by and large not played a significant role in the implementation of m-banking services.

There are fundamental reasons why MFIs are generally not positioned to get into m-banking early on. Most m-banking deployments provide transfers, a service that very few MFIs provide. Indeed, MFIs and successful m-banking businesses occupy different worlds today. The MFI world is focused on credit and maybe some savings, while the m-banking world is focused on transfers and payments. The MFI world largely uses unsophisticated backend systems while the m-banking world uses some of the most sophisticated backend systems we know today (even better than some banks). The MFI world focuses on creating low-cost, human-driven infrastructure, while the m-banking world is tied into and uses payment systems infrastructure. It is not surprising then that these two worlds have not yet aligned.

These gaps mean that many MFIs are considering m-banking, but find themselves in the same situation as Opportunity Bank in Malawi: m-banking promises a revolution in customer outreach and service at a very low cost; their customers and potential customers already have mobile phones; but there is no m-banking service available. What should MFIs in these situations do? This Focus Note aims to do two things: (i) explore the various roles that MFIs can play in m-banking and (ii) explore the potential benefits MFIs and their customers expect to gain from pursuing m-banking.

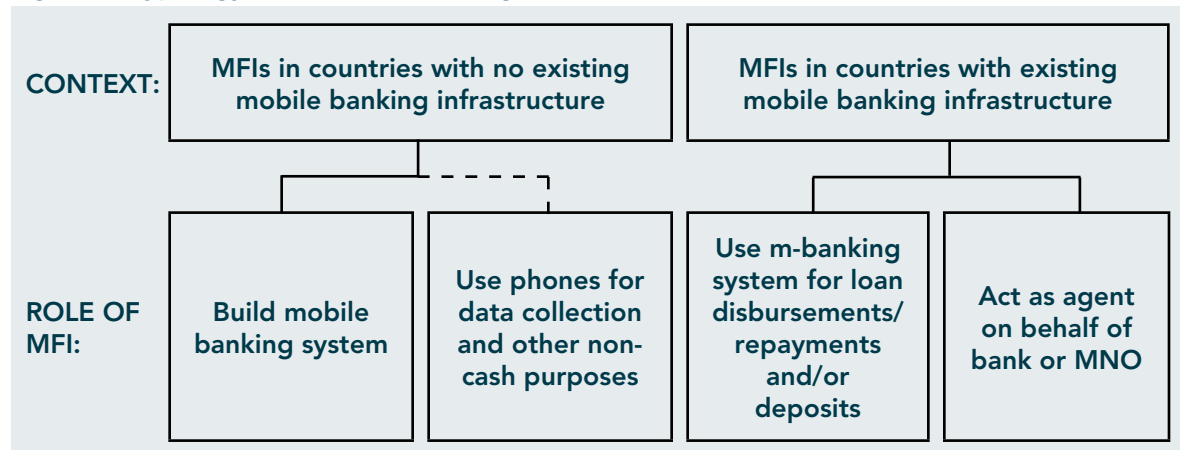
The role that MFIs can play largely depends on the presence or absence of widely available m-banking services (called mobile banking infrastructure in Figure 1).

1 Information on the case of Opportunity Bank in Malawi is from email and telephone exchanges with management of the bank (including the chief executive officer, the chief operations officer, and the head of marketing) between October 2009 and April 2010.

2 Banking regulations in Malawi do not have a separate category for microfinance banks. Therefore, Opportunity Bank is licensed and regulated as a commercial bank but has an explicit mission to serve poor, previously unbanked customers.

3 For more information on Opportunity Bank's alternative delivery channels see <http://technology.cgap.org/2009/12/03/in-malawi-biometric-atms-confront-traditional-ways-of-moving-money/>

Figure 1: Typology of MFIs in m-banking



In a country without an existing m-banking infrastructure, an MFI must decide whether to develop its own service or wait until the service and infrastructure are created. Developing an m-banking service takes a significant amount of planning, time, financial investment, organizational and operational change, technical expertise, and persistence and is an option only for MFIs with significant resources and a stable infrastructure. Other MFIs in this context can still use mobile phones to reduce costs and enhance customer service, for example, by sending automatic SMS messages for repayment reminders and allowing customers to check balances via their phones. The first section of this paper explores how MFIs in this context are responding.

The second section looks at the options available to an MFI if it is in a country with an existing m-banking infrastructure. The most obvious option is to use the m-banking network for loan disbursements, repayments, and deposits. As an alternative, MFIs can act as agents on behalf of the m-banking service. This may allow the MFI's management, staff, and customers to gain familiarity with the service and earn additional revenue for the MFI through commissions.

The third section of this paper addresses questions that MFIs may have about m-banking. While many see the potential of m-banking, what are the actual

benefits for an MFI and its customers? This section explores three key questions:

1. Can m-banking help MFIs serve existing customers better?
2. Can m-banking help MFIs reach new customer segments?
3. Can m-banking reduce costs for MFIs and for customers?

### Should an MFI in a country without any existing m-banking infrastructure create its own m-banking system?

Let's return to the story of Opportunity Bank of Malawi and its decision to develop an m-banking service in the absence of an existing m-banking infrastructure in the country. How did this small microfinance bank fare in the midst of the various challenges involved in setting up an m-banking service?

Unfortunately, as Opportunity Bank discovered, setting up an m-banking service is complex, time-consuming, and expensive. Most m-banking services used by commercial banks focus on existing (often upscale) customers who want more convenience, as opposed to bringing the unbanked into the financial system.<sup>4</sup> Developing an m-banking service from

<sup>4</sup> Offering a cell phone banking channel is becoming common for many banks in Africa and elsewhere in the developing world. For example, all four of South Africa's major banks and 13 of the largest banks in Kenya now advertise cell phone banking. Similar to Internet banking in developed markets, this channel lets existing customers conveniently access their accounts at any time. However, the typical cell phone banking offering is often limited to basic informational services like balance enquiry, airtime top-up, and mini account statements.

### Box 1. Main Messages

- **Developing an m-banking system is expensive, time consuming, and complex; very few MFIs have the significant financial, technical, and managerial capacity that is required.**
- **Most MFIs should use mobile phones in ways that increase customer convenience (e.g., automatic loan reminders) and strengthen the institution so that it will be ready to link to a system when it is developed.**

scratch that effectively reaches the unbanked is not easy. In the first months of 2008, Opportunity Bank discovered many regulatory, technological, and operational hurdles. It hired external consultants to help develop an appropriate plan that focused on the following four activities that are required for any MFI developing an m-banking service.

- 1. Develop a strategy and business plan.** MFIs must be clear about how m-banking addresses their core customer value proposition. In an industry with as much hype as m-banking, it is easy to get carried away with enthusiasm without fully understanding the benefits and costs. MFIs must identify the problem they are trying to solve and determine how exactly m-banking will solve that problem. Are there alternative solutions available? For example, is the primary purpose of the service to improve satisfaction and retain existing customers? To reach new customer segments or new geographic areas? To reduce congestion in branches? To reduce transaction costs (which ones)? Are ATMs, kiosks, or mobile banks a better solution? MFIs should be as specific as possible about what they want to achieve before committing to developing a system.
- 2. Develop a technological solution.** Developing a technological solution is time consuming and expensive. First, the bank's own banking software must have the ability to be integrated with an m-banking platform. Opportunity Bank had to do
- 3. Create and manage an agent network.** To use an electronic channel, such as mobile phones, for financial services, customers have to convert cash to electronic value and vice versa. This can be achieved through networks of retail agents, such as airtime resellers, post offices, and small store owners. MNOs have a distinct advantage in this area because their national-scale networks for airtime distribution often involve distributors and thousands of retailers. Building and managing an extensive agent network from scratch is considerably different than running an MFI. The business processes involved include identifying and training agents and ensuring an effective, continuous system of liquidity management and quality control. In light of this, Opportunity Bank decided to partner with a major agricultural supply store in Malawi that had shops in many Malawi towns. Doing so leveraged the national-scale infrastructure of the agricultural supplier and eliminated the need to manage individual stores.
- 4. Negotiate partnerships with one or more MNOs.** An MFI or bank cannot develop an m-banking service without the cooperation of at least one

an entire systems upgrade—a process that took a year and cost more than \$100,000 to complete. XacBank, a microfinance bank in Mongolia, invested even more than this to upgrade its core banking system before developing its own m-banking service.<sup>5</sup> Second, the phone's interface with the bank (e.g., SMS, USSD, STK, etc.) must be selected. Important factors influencing this decision include security, ease of use, ability to function on unsophisticated handsets, and capabilities of the MNO.<sup>6</sup> Opportunity Bank developed a USSD interface that it felt was secure and would work on even the cheapest phones. Finally, the interface or middleware between the management information system (MIS) and the customer-facing application must be developed. Institutions can purchase an off-the-shelf solution or develop their own, although both options are expensive.

<sup>5</sup> XacBank's m-banking project received technical advice and funding from the CGAP Technology Program.

<sup>6</sup> For a more detailed explanation of the types of technical choices defining the mobile banking platform, see Mas and Kumar (2008).

MNO. An important aspect of the service is secure and reliable data flows between the MFI's banking software and the MNO's platform. The MNO must have the technical expertise to manage the m-banking application, which may not be in place if m-banking is new to a country. Furthermore, if an MNO is considering launching its own system, it may not want to partner with an MFI. Finally, because MNOs are volume-oriented businesses, they will likely negotiate only with MFIs that have enough customers to make their investment worthwhile.

The following checklist can help to determine if an MFI in a country without an existing m-banking service is well positioned to build an m-banking system.

1. There are no plans by MNOs (or third-party mobile payment companies) to build a service in the foreseeable future. If an MNO is planning to launch a system, it is probably better to wait and leverage that service after it launches (see discussion in the next section on how MFIs have done that).
2. The MFI has defined the strategic objective of the m-banking service and is convinced that m-banking is the best way to address the institution's particular issues. In addition, the MFI has a supportive board and, ideally, a strong management team with the proven ability to implement complex technology-based projects. The MFI may outsource some key functions but not all of them, so there must be strong internal capacity.
3. The MFI has a strong core banking IT infrastructure that is able to handle large volumes of data flow. If the MFI has substantial issues with its current MIS, those need to be fixed first.
4. Regulatory conditions in the MFI's country are favorable. Two "necessary but not sufficient" regulatory conditions must be in place: authorization to use retail agents as cash-in/cash-out points and development of risk-based anti-

money laundering and combating financing of terrorism rules adapted to the realities of remote transactions conducted through agents.<sup>7</sup>

5. The MFI has substantial financial resources to pay not only for the technology solution but also for employing capable human resources, building and managing an agent network, re-engineering some branch processes, training staff, and launching a significant marketing campaign. MFIs that have embarked down this path have spent anywhere from a few hundred thousand dollars to more than \$1 million to develop the actual system.
6. The MFI has sufficient transaction volumes to allow the upfront costs to be recouped faster.

Only in rare cases will MFIs meet all of these conditions. Given the complexity and expense of developing an m-banking system, only the strongest and biggest MFIs should attempt it. As more MFIs experiment with m-banking and as more technology vendors develop appropriate off-the-shelf solutions at lower prices, this may change. Furthermore, we expect more MNOs to be offering m-banking products that MFIs can leverage.

Some MFIs have overcome these obstacles in interesting ways. Tameer Microfinance Bank (120,000 customers, \$23.6 million portfolio outstanding, and \$17 million in deposits) in Pakistan did meet all of the criteria listed and has launched an m-banking service (called easypaisa) that shows promise of reaching scale.<sup>8</sup> In the first six months after launching, easypaisa processed well over 1 million transactions.

The bank started its m-banking process on its own without an existing m-banking infrastructure. However, it did not bring the product to market on its own but rather it worked closely with one of Pakistan's leading MNOs to do so. In 2007, Tameer Microfinance Bank started negotiations with Telenor, the second largest MNO in Pakistan. The regulator in Pakistan required an MNO to develop m-banking services in collaboration with a bank. As such, Telenor

<sup>7</sup> For more information on regulations specific to branchless banking see Lyman, Pickens, and Porteous (2008).

<sup>8</sup> Tameer Microfinance Bank's m-banking project received technical advice and funding from the CGAP Technology Program. Information about easypaisa was obtained from a telephone interview with Abbas Sikaner (group executive director of Tameer Microfinance Bank) in February 2010.

needed a bank partner. Tameer wanted to leverage Telenor's customer base (30 million at that time) and its network of 180,000 resellers and franchisees, as well as its national advertising and marketing reach.

A year later, Telenor purchased a 51 percent share in Tameer Microfinance Bank. Over the next year the two organizations worked together to create the easypaisa brand for their m-banking service.

Although Tameer's history of serving low-income people in Pakistan with financial services is important, the future success and scalability of easypaisa will probably depend largely on Telenor. The joint costs to prepare easypaisa for launch (including the technical system, agent network, cash management system, call center, branding, etc.) was around \$7 million. However, post-launch, Telenor is still spending more than \$100,000 a month on advertising.

Most MFIs can't expect an MNO to invest in them the way Telenor invested in Tameer. Another option for MFIs in countries without an m-banking service might be to partner with other MFIs and smaller banks to tackle m-banking as a group. Of course, strategic alliances come with many challenges. The coordination required among all the participating institutions can take enormous amounts of time and energy, especially at the senior management level. However, several smaller MFIs working together to develop an m-banking service could bring advantages that they would not achieve independently, including the following:

- **Scale.** Due to the high set-up costs and low revenue/cost saving per transaction, large scale is essential for the cost-benefit analysis to favor m-banking. If several smaller MFIs each paid only part of the initial investment, their collective scale could justify the investment.
- **Ability to negotiate with MNOs.** MNOs are focused on large-scale ventures that can bring profits quickly. If MFIs negotiate as a group, they

will be more likely to offer a value proposition that is worth considering.

- **Wider talent pool.** It might be difficult to find all the skills required in a single MFI but pooled across several MFIs there will be more people with various skills.
- **Wider network of agents.** The collective branches of the MFIs could constitute a basic agent network where customers of the m-banking service could cash-in/cash-out. Several MFIs working together will be able to negotiate better deals with networks like post offices or grocery stores.
- **Financial resources.** If several MFIs share the costs associated with m-banking, it will be much more affordable on a per institution basis.

The Rural Bankers Association of the Philippines–Microenterprise Access to Banking Services (MABS)<sup>9</sup> program in the Philippines is a good example of cooperation among organizations.<sup>10</sup> This USAID-assisted program organized a group of 60 rural banks, which used their ties with more than a thousand small business customers to serve as resellers for GCash, a mobile payments solution developed by GXI, a subsidiary of Globe Telecom. Although GCash already existed, it was not present in rural communities in the Philippines. A network of GCash resellers (similar to check cashing businesses) was built up in these communities thanks to the support provided by the rural banks. In addition, several thousand employees of rural banks and other businesses use these merchants to cash-out their salaries.<sup>11</sup> On its own, each rural bank was too small to be attractive to GXI. But as a collective association with over 2,000 branches and millions of potential customers, the small banks provided a significant business proposition for GXI.

Tameer was bought by an MNO and launched easypaisa. The 60 rural banks in the Philippines helped create the agent network for GCash, a service by an MNO. What happened to Opportunity Bank in Malawi?

9 <http://www.rbapmabs.org>

10 Information on MABS is from an interview with project leader John Owens in November 2009 and email exchanges in April 2010.

11 <http://www.mobilephonebanking.rbap.org/article/archive/15#tas> and <http://blog.mobilephonebanking.rbap.org/index.php/2009/05/21/gcash-paves-the-way-for-pr-banks-micro-financing-success/#more-126>

Opportunity Bank spent most of 2008 upgrading its MIS and developing a business plan. In 2009, it built the technology solution, secured regulatory approvals after many meetings with the Central Bank, and did customer research to form the basis of a marketing plan. It began pilot testing its service (called Banki mmanja or “bank in your hand”) with staff and launched the product in May 2010.

Only time will tell whether Opportunity Bank made the right decision to spend the time and money to develop its own m-banking system. It took more than two years to develop the service. According to Opportunity Bank, if at least 10 percent of existing customers sign up for the service by the end of the first year and each customer does at least two transactions a month, Opportunity Bank will make profits on the service by the middle of the second year.<sup>12</sup> While Opportunity Bank was developing its service, the MNO Zain announced that it would launch its m-banking service called Zap (already in place in other African countries). Despite this development, Opportunity Bank decided to go ahead with its plans. Zap could develop a much larger agent network than the Opportunity Bank network, and Opportunity Bank may eventually link into this system to gain access to more agents and remain competitive.

What should MFIs do? Most MFIs are in countries that do not have an existing m-banking service, and most MFIs do not fulfill all the criteria that would make them strong candidates to develop their own m-banking service—so what are their options? Reaching previously unbanked people with a network of retail agents and mobile phones is ideal. However, using cell phones as a distribution channel is not an all-or-nothing proposition, and many banks are using phones to increase customer convenience, lower costs, and earn extra revenue. MFIs can do this as well.

BancoSol, a leading microfinance bank in Bolivia, started its mobile phone strategy with basic SMS information services for customers before introducing more complex m-banking transactions. BancoSol’s nearly 400,000 customers can use their mobile phones to check account balances, receive information on the date and amount of their next loan installment, and transfer funds from one of their accounts to another. BancoSol wants to understand how its customers interact with this technology before launching full banking services via mobile phones.<sup>13</sup> MFIs can lower costs through automatic text messages that notify customers about upcoming payments or loan disbursements or warn of late payment notices. This service is relatively simple to implement and will save loan officers time and will reduce phone bills. Even if using text messages saves each loan officer an hour a day, it can add up to cost savings for the MFI. These types of additive services won’t bring the institution large numbers of new customers, but they can be useful for both existing customers and the institution.

Second, m-banking is less than 10 years old and is a rapidly changing industry. If there is no m-banking service in a country now, there will be one soon. And, just because an m-banking service exists does not mean that an MFI is ready to take advantage of it. MFIs with strong management teams, solid MIS, and effective internal controls will benefit the most. Strengthening these areas are good for the core mission of any MFI anyway, and they will make the MFI that much more ready to adopt m-banking when it does become available.

In summary, although some large, stable MFIs may implement m-banking services successfully on their own, the majority of MFIs should focus on developing the strength and capabilities they will need to take advantage of m-banking services when they do become available.

<sup>12</sup> The cost includes both the depreciation over five years of the initial investment of \$200,000 as well as ongoing costs. However, the amount budgeted for advertising in the first year (\$54,000) is very low compared to other m-banking services with a national scope, which tend to run in the millions of dollars.

<sup>13</sup> Information on the case of BancoSol is from an interview with Gustavo Sanchez, national manager of IT and Process for BancoSol, November 2009.

## What Role Can an MFI Play in a Country with Existing Mobile Banking Infrastructure?

### Can mobile banking be used to collect loan repayments and deposits?

There are several options available to MFIs in a country with an existing m-banking system. The first and most obvious application of m-banking is to facilitate loan repayments and deposits.<sup>14</sup> As we explain in this section, MFIs that have done this report lower risk and costs for themselves and their customers from handling and transporting large amounts of cash.

Although everyone interested in m-banking has heard of M-PESA, many don't know that M-PESA actually started as a pilot to facilitate microfinance loan repayments with the MFI Faulu Kenya.<sup>15</sup> Originally, Safaricom (the MNO) wanted to combine its connectivity, brand, and distribution network of airtime resellers with Faulu's low-income customer base to enable customers to receive loan disbursements and make loan repayments using mobile phones. The two organizations ran a pilot for six months in 2005 during which time Faulu customers used the service to repay loans. While the intent of the pilot was loan repayment, customers used the service in all sorts of creative ways that were very interesting to Safaricom. They used it to pay for goods and services between pilot participants and to convert the e-money to airtime that could be sent to relatives in other parts of the country. As a result of this pilot, Safaricom altered its strategy and developed the key marketing message of M-PESA, "Send Money Home," and went on to launch the most successful m-payments service in the world.

### Box 2. Main Messages

- MFIs can use existing m-banking systems to facilitate both loan repayments and deposits. This does not necessarily increase credit risk, although the impact on group cohesion must be carefully managed.
- MFIs can also act as agents on behalf of a bank or MNO's m-banking service. This can help both the MFI and its customers to become familiar with the system and bring in additional revenue.

What happened at Faulu Kenya? In addition to some technological challenges, Faulu was not ready for the M-PESA service to be used for loan repayments. Its customers found M-PESA so easy and convenient that there was no compelling need for group meetings. Regular attendance at group meetings was a core component of Faulu's methodology, and there was concern among both loan officers and management that a reduction in group interaction would lead to a breakdown in repayment discipline. As a result, Faulu and Safaricom mutually agreed that Faulu would not be a part of the service post-pilot.

However, the story does not end there. In May 2009, Faulu became the first deposit-taking MFI in Kenya. Faulu saw little risk in allowing its new deposit customers to deposit via M-PESA. In December 2009, Faulu launched a service to link M-PESA with Faulu savings accounts. Being able to move their money from M-PESA into Faulu accounts offers customers the added benefit of being able to earn interest and develop a good savings record that can lead to eligibility for loans. Four months after the launch, about \$60,000 is transferred between the two institutions each week, and 30,000 customers are using the service.

Deposit mobilization via M-PESA is low risk for both customers and MFIs. But does Faulu's experience

<sup>14</sup> Regulation in most countries prevents unlicensed institutions from taking deposits. However, both the prevalence of regulations facilitating MFIs to take deposits and the number of MFIs with such licenses is increasing each year. For example, the Kenyan Microfinance Act of 2008 allows the Central Bank to license and regulate "deposit-taking microfinance businesses." In 2010, slightly more than 50 percent of all MFIs reporting to MIX Market offer some form of voluntary deposits.

<sup>15</sup> Information for the Faulu Kenya case study is from Hughes and Lonie (2007), as well as from interviews with Lydia Koros (then managing director of Faulu Kenya) in October 2009 and Anne Kimari (head of Finance) in May 2010.

mean that loan repayment via M-PESA is too risky? Probably not. In 2005, the service was the first of its kind. The emphasis of the pilot was on the technology itself, and little thought was given beforehand to the impact on group cohesion.

Using external technical assistance,<sup>16</sup> Small and Micro Enterprise Programme (SMEP) in Kenya was the first MFI to link into the M-PESA platform for group loan repayments. Following a 2008 pilot with 200 group loan customers, the service was rolled out to all of SMEP's 51,000 customers in 2009, allowing them to make loan repayments and savings contributions.<sup>17</sup> SMEP customers pay through M-PESA before the meetings, and the loan officer verifies at the meetings that the loan payments have been received.

Kenya Women's Finance Trust (KWFT) is doing something very similar.<sup>18</sup> With more than 300,000 active borrowers and a loan portfolio of nearly \$140 million outstanding, KWFT is probably the largest MFI using M-PESA for loan repayments today. Similar to SMEP, KWFT has all members of a group repay the loan via M-PESA (using M-PESA's bill pay functionality) at least two days before each group meeting. Attendance at group meetings is still compulsory, and loan officers arrive with a printout indicating the actual loan repayments already made by each member. Group meetings used to be dominated by cash collection, but there is now more time to discuss business problems and financial education—and less time is needed for group meetings.

Some MFIs are still worried about group cohesion and are starting to use m-banking services for repayments for individual loans only. With individual loans, once a loan is disbursed, loan officers visit their customers from time to time to monitor the performance of the

business and impact of the loan. There is no strict meeting schedule as there is for group loans.

One MFI that is using m-banking for individual loan repayments is Tujijenge Tanzania.<sup>19</sup> Tujijenge has over 12,000 customers as of March 2010. Most of them are in the Dar es Salaam area. Tujijenge launched a pilot in 2009 with 30 individual loan customers who used M-PESA to make loan repayments. Customers were able to pay from anywhere in Tanzania and could make repayments in any amount at any time instead of waiting for the specific repayment date. The pilot was successful, and Tujijenge now makes all repayments via M-PESA compulsory for individual loans below \$1,800.

In May 2010, M-PESA and Equity Bank in Kenya announced the most integrated product offering so far—a low-cost, low-entry microsavings account called M-Kesho.<sup>20</sup> With this account, Equity Bank hopes to convert the majority of M-PESA's 9.4 million users into account holders at the bank and plans to offer microinsurance and microloans in addition to savings accounts. Very few institutions have the negotiating power of Equity Bank to achieve this, but this joint venture has the potential to extend access to formal financial services to millions of currently unbanked individuals.

As M-PESA and services like it become more widespread, groups are creatively using it to facilitate savings and loans both with and without formal MFI linkages. For example, Village Savings and Loans Associations (VSLAs) in Tanzania (trained by CARE International) will be using M-PESA to store excess group liquidity as well as save for specific purposes like bulk purchases of fertilizer.<sup>21</sup> There is currently no formal link with a financial institution, or special price

16 Triple Jump Advisory Services developed the m-banking system for SMEP. Triple Jump Advisory Services is developing m-banking for VFC Rwanda, a deposit-taking institution, that will allow its customers to make savings deposits using Rwanda's MTN Mobile Money.

17 Interview with George Kinganjur, consultant and project manager for SMEP, May 2010.

18 Information on the KWFT case study comes from an interview with Gichimu Waweru (general manager, Marketing) in May 2010.

19 Information on the case study of Tujijenge is taken from interviews with Tujijenge management in November 2009 and subsequent email exchanges, as well as interviews with Triple Jump Advisory Services.

20 See <http://www.businessdailyafrica.com/Company%20Industry/Safaricom%20roils%20the%20market%20with%20phone%20based%20savings%20account/-/539550/921044/-/4fj674z/-/index.html>

21 Information on CARE VSLAs' use of M-PESA is from an interview with Mark Staehle, project director, Save Up (CARE USA Access Africa Program) in March 2010.



with M-PESA, but the benefits of storing money in a secure location (versus in a locked box in members' homes) are so strong that CARE believes VSLAs will be willing to pay the normal price.

When people who have never had access to a bank account before experience a nearly ubiquitous m-banking service like M-PESA, they figure out ways through trial and error to use it to meet their money management needs.<sup>22</sup> MFIs should observe customer behavior and work closely with customers during this time to continue to figure out the best way to make loan payments and deposits via m-banking services safe and convenient for both customers and MFIs.

### **When should an MFI consider being an agent in an m-banking system?**

Even with mobile payments, cash needs to get in and out of the system. Agents, operating out of existing retail infrastructure such as grocery stores and post offices, act as "human ATMs" and convert electronic value into cash and vice versa. Any m-banking implementation must have a critical mass of agents to attract enough new customers for the business model to be viable.<sup>23</sup> As discussed, MFIs that create their own m-banking service have the extra burden of creating an agent network, while those MFIs that piggyback off existing services pass this responsibility onto the m-banking provider itself.

If an MFI does not initially use an m-banking service for loan repayments and deposits, it can be involved in the service in other ways. Working as an agent for an MNO or bank that has launched an m-banking service can be a good way for an MFI to learn about how the service works without high investment costs. This strategy also allows customers to gain exposure to the system, perhaps increasing the likelihood that if the MFI eventually decides to offer loan repayments and deposits over the mobile channel, they will feel

more comfortable with this option. It can also help MFIs differentiate themselves from the competition and bring enhanced liquidity into their branch locations.

VisionFund's partnership with WING Cambodia illustrates this point.<sup>24</sup> VisionFund Cambodia has been operating in Cambodia for more than a decade. By the end of 2009, it had 98,000 customers and more than \$21 million in loan portfolio outstanding. WING Cambodia is a new mobile phone banking service with over 100,000 customers that launched in January 2009 and is sponsored by ANZ Bank.

As WING sought to develop an agent network where customers could conduct cash transactions, it faced many challenges. Cambodia does not have national retail networks, such as post offices or convenience stores, that can be used as agents. Because of this, WING partnered with MFIs to provide this service. Originally, WING thought its service could be used as a mechanism for loan repayments and disbursements, but like Safaricom it quickly realized that this would involve additional complications and delay the time to market. The MFI customer base was used to the high touch and community re-enforcement that is inherent to loan repayment methods. Instead, WING used VisionFund outlets as WING Cash X-press points for cash-in/cash-out.<sup>25</sup>

From VisionFund's perspective, the partnership allows it to differentiate itself from other MFIs in the market. According to VisionFund, customers see it as innovative. VisionFund is not licensed to take deposits, but it can now offer customers the opportunity to store value using the WING service. On the revenue side, VisionFund receives income from transaction commissions and has an opportunity to cross-sell products. But there is also a cost side of the equation. VisionFund initially invested in 10 additional staff to serve as WING Pilots to register

<sup>22</sup> For example, see Morawczynski and Pickens (2009).

<sup>23</sup> For more information on cash handling through agent networks see Mas (2008).

<sup>24</sup> Information on the case of VisionFund was taken from interviews with Brad Jones (then CEO of WING Cambodia) and Veasna Chumsam (business initiatives manager at VisionFund) between October 2009 and April 2010. For additional information, see <http://technology.cgap.org/2009/04/15/mobile-banking-cambodia-and-the-financial-crisis/>

<sup>25</sup> <http://allpaynews.com/content/mmt-explained-wing-cambodia-an-operator-agnostic-mobile-money-service>

new customers, and it trained new and existing staff on cash-in/cash-out procedures. It estimated that each dedicated staff needed to open 100 new WING accounts a month to break even.

After six months, it became apparent that the 100 account threshold was not being reached. Through negotiations with WING, VisionFund transferred the costs of the WING Pilots to WING directly, while still housing the WING Pilots in its branches. VisionFund still directly provides the WING Cash X-press points for cash-in/cash-out. Therefore, even serving as an agent for an m-banking service involves costs that MFIs must consider in addition to the extra revenue.

Both VisionFund and WING Cambodia hope to use WING for loan repayments and disbursements for MFI customers in the future, but they want to ensure that this is done carefully. Both sides see the current arrangement as an appropriate way for VisionFund to take advantage of m-banking, while providing WING Cambodia with much needed cash points for customers in rural areas.

Another example of an MFI that is considering the role of an agent for an established m-banking service is BRAC, one of the largest MFIs in Bangladesh and an industry leader.<sup>26</sup> Bangladesh still has relatively low mobile penetration, and therefore using mobile phones for loan repayments is not a priority for BRAC. Mobile penetration among group customers is even lower than the national average of around 30 percent, according to BRAC. While it is considering m-banking for individual loan customers with an average loan size above a certain amount, only 300,000 out of BRAC's 6.3 million active borrowers are individual customers.

Instead, BRAC is much more interested in its branches being used as agent locations for other branchless banking initiatives. Though this has not yet been initiated, BRAC branches could serve as agents that manage a whole network of smaller agents (most

likely their customers) in the area. With 2,500 BRAC branches currently in Bangladesh, there is potential for extensive reach. The main motivation for BRAC to serve as agents is to attain a cheaper source of funds. If BRAC could manage liquidity issues and use the excess cash for lending, it could make additional revenue on the spread and benefit from a cheaper cost of capital.

An MFI working as an agent on behalf of an m-banking provider can be a win-win situation for both organizations. For the m-banking provider, there are several benefits. First, providers need to find agents that will be patient in seeing commissions as the customer base builds and transactions start to flow through the system. This can often take some time, and many agents that have a pure profit motivation may not stick around long enough to see positive results. MFI networks are unlikely to be serving as agents solely for the revenue, so they are more likely to be patient as the scheme builds. Second, m-banking providers have the most room for growth when they target the poor, unbanked customer segment. MFIs already have access to this customer base, and they can provide good visibility for the m-banking provider within these communities. MFI staff are also financially astute and can explain the products well to new customers unfamiliar with banking services. Third, MFIs with significant presence throughout a country offer a network of agent locations at one time to the m-banking provider, significantly reducing the time it would otherwise take to sign up agents one by one.

For the MFI, there are also several benefits. Serving as an agent for an m-banking service will differentiate it from its competitors. Second, doing so will familiarize MFI staff and customers with the service before the MFI invests more time and resources into linking into the service for loan repayments and other transactions. Third, while MFIs may earn commissions from the transactions they handle, the experience of VisionFund shows that it may just be enough to cover

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<sup>26</sup> Information on the case study of BRAC is from an interview with Shameran Abed, adviser at BRAC, in March 2010.

their costs. If MFIs can stay ahead of their competitors and learn about a new m-banking service without losing money, it is worth the effort.

## What Benefits Can MFIs Expect to Gain by Using Mobile Banking?

### Can m-banking help MFIs serve existing customers better?

MFIs around the world see m-banking as an opportunity to reach new customer segments and grow faster. Mobile phones can expand the reach of MFIs that struggle with the high costs associated with servicing extremely hard-to-reach rural customers. However, evidence suggests that the first benefit that results from m-banking for MFIs is improved customer service to existing customers.

This has been the experience of SMEP in Kenya once it linked into the M-PESA platform for repayment services for its customers. Before M-PESA was used, a SMEP customer had a lengthy repayment process. She would carry her cash to the group gathering location. Meetings would be long as each customer's cash was counted and recorded by the loan officer. This can take a particularly long time in Kenya since fake bills are common, and the treasurer must inspect every note to make sure it is genuine. If she was the group treasurer, she would then have to take all of the group's cash to the bank, wait her turn at the bank, and finally deposit the money. As a small business owner, she would spend a significant amount of time away from her business. In addition, she incurred substantial security risk walking and taking the bus with large amounts of cash. Now with M-PESA, the process is simple and safer. At any time during the repayment period, when the customer has the cash flow to make her repayment (or even a portion of the repayment), she can walk to a nearby M-PESA agent, load money into her account, and send the electronic value to the SMEP account directly. Meetings with

the loan officer now involve quick verification of the transaction, which allows the customer to return to her business faster.<sup>27</sup> While the m-banking platform has not brought new customers to SMEP (at least, not yet), SMEP reports that it has increased customer satisfaction for its existing ones.

One indication of the value of the service to existing customers is their willingness to pay a fee in order to repay via M-PESA. M-PESA treats microfinance loan repayments as bill payments. Customers pay \$0.25 per transaction, and MFIs pay from zero to \$1.25 depending on the value of the transfer. Customer willingness to pay depends very much on the previous cash collection method used. In the case of SMEP, where the cash transport responsibility lies with customers, customers are very willing to pay a small fee to have heightened security and save hours every week. Lydia Koros, former managing director of Faulu Kenya, says, "Does the cost deter customers? No. We have educated our customers to look at the total cost of making a transaction—including bus fare and the opportunity cost of the time spent traveling and waiting in queues versus running their business. They realize that if they walk one block to deposit quickly at an M-PESA agent, the \$0.25 is much cheaper than taking a bus ride to the nearest Faulu branch." In this case, the primary benefit to MFIs is greater customer satisfaction.

On the other hand, many MFI loan officers in other countries collect cash at group meetings and travel with the cash to an MFI branch office or a partnering bank branch. These MFIs benefit significantly from m-banking through a reduction in security risk and fraud risk. However, customers who are used to "free" cash collection at their doorstep may not immediately see the benefit of taking responsibility for their own loan payments through an m-banking service. Even \$0.25 to transfer funds to the MFI may seem high. In this case, MFIs may consider subsidizing the cost for customers (still a cost savings compared with associated costs of cash-carrying loan officers)

<sup>27</sup> The customer experience is based on discussions with Cameron Goldie-Scot, former Triple Jump Advisory Services consultant who worked on the launch of SMEP's m-banking service, and George Kinyanjui, consultant and project manager for SMEP.

### Box 3. Main Messages

- **Mobile banking can help existing MFI customers save time and money, experience greater security, and manage their cash flows with more flexibility.**
- **There is little evidence to suggest that mobile banking will help MFIs reach new customer segments since microcredit methodology relies heavily on human interactions.**
- **Early evidence suggests that m-banking can reduce operational costs for MFIs and that these costs can be passed on to customers in the form of lower interest rates.**

and gradually educating customers on the benefits of being able to make loan repayments when and where it is convenient for them.

XacBank in Mongolia began its m-banking project with the expectation that it would bring new customers to the institution.<sup>28</sup> The Mongolian environment epitomizes the challenges many MFIs face in reaching more customers in difficult environments. Mongolia has a population of 2.7 million people spread over a vast territory of 1.5 million square kilometers. Much of the population is semi-nomadic, presenting even further challenges in how best to reach more customers. Therefore, while XacBank saw m-banking as offering more convenient services to its 62,000 active borrowers, as well as its 140,000 depositors and 80,000 card holders, it also considered m-banking as one channel in its strategy to reach more people.

According to XacBank, the vast majority of the 35,000 customers registered so far for the m-banking service are existing customers. Interestingly, XacBank is not using the service for loan repayments, although this is planned to begin in June 2010. The service is predominately used for person-to-person transfers and links a customer's XacBank current account with his or her mobile account.

The fact that m-banking may just help MFIs provide an extra benefit to current customers should not detract from its appeal. Providing customers with flexibility in when they make their payments, shortening group meetings, and decreasing cases of theft or fraud are benefits that MFI customers highly value. Ultimately, MFIs also benefit when they have a loyal and satisfied customer base.

### Can m-banking help MFIs reach new customer segments?

While serving existing customers better may be an extra benefit of m-banking, many MFIs often assume that it will enable them to expand their customer base. Nevertheless, there is little evidence thus far to demonstrate that m-banking has helped MFIs (or indeed banks) grow faster.

KWFT does not expect its link with M-PESA to help it expand its loan customer base significantly, but KWFT does expect M-PESA to help it mobilize new deposits easily and cheaply. KWFT's loan methodology—like that of most MFIs—is based on a high level of human interaction. Loan officers are well known in the communities in which they operate, and frequent face-to-face meetings are essential to strengthen the social capital on which the methodology is based. Even if clients can make loan repayments far from a KWFT branch (via agents), the loan officer still needs to be close to both a branch and his clients. Geographic expansion with this methodology will not change dramatically with m-banking.

However, deposits are a different product. There are no appraisals, group meetings, or strict repayment schedules. It is a flexible product, and customers can deposit any amount they wish whenever they wish. KWFT has just received a license to accept deposits. Converting its current branches into branches that are capable of accepting deposits is expensive as there

<sup>28</sup> Information on the case of XacBank is from an interview with a XacBank staff in November 2009, along with a project plan prepared for CGAP in May 2007 as part of the Technology Program's project portfolio. For more information on XacBank's m-banking project see <http://technology.cgap.org/2010/01/20/mongoila-mobile-banking/>

are high structural and infrastructure costs. Thanks to M-PESA, KWFT will convert only its regional hubs into deposit taking branches and will use M-PESA to accept deposits from customers everywhere else in the country. In this way, m-banking will help it to reach new customer segments for the deposit product.

The case of Tameer Microfinance Bank provides an example of successful new customer acquisition through m-banking. But the Tameer business case is very different from that of most MFIs. The easypaisa service allows people to send transfers and pay bills through Telenor's vast agent network. In the six months following the first payment product launch in October 2009, Tameer processed well over 1 million transactions on behalf of approximately 500,000 customers. Since launching the mobile account in February 2010, there have been 29,000 new account openings. In both of these cases, all transactions have been carried out by new customers of Tameer Microfinance Bank, not by its existing customer base. Tameer is not yet using its m-banking service for loan-related microfinance transactions among existing customers.

It is possible that as more MFIs experiment with m-banking, some of them will reach new customers and grow into larger institutions. But until this evidence is available, MFIs should consider m-banking as a way to serve their existing customers better. MFIs should continue with their original growth strategy, while taking into consideration how to integrate an m-banking service.

### **Can m-banking reduce costs for MFIs and for customers?**

Frequent, direct contact with people in hard-to-reach locations makes microcredit expensive. But if loan disbursements and repayments, and even some monitoring, can be carried out by both the MFI and

the customer via the mobile phone already in the customer's pocket, costs can be greatly reduced—or so the idea goes.

Early evidence suggests that m-banking can reduce operational costs, and several MFIs have already reduced or have plans to reduce interest rates as a result of m-banking. However, the size of cost reduction will vary for each institution, depending on a variety of factors, such as scale and methodology.

MABS has used m-banking as a way to decrease costs for rural banks in the Philippines. The Philippines has been a front runner in the branchless banking area, with both GCash and SMART Money established several years ago by the two leading mobile operators. MABS has helped 60 rural banks, with over 885 bank branches, identify customers that have businesses that are suitable to serve as GCash resellers. Rural bank customers use these small merchants to make loan repayments and deposits. When the cost of traveling to the bank (which ranges from \$0.20 to \$2.40) exceeds the cost of converting cash to GCash (\$0.20 or 1 percent, whichever is higher) bank customers are willing to pay the GCash conversion fee instead of the cost of traveling to the rural bank branches.<sup>29</sup>

One rural bank, Green Bank, has also realized that it is much cheaper to encourage customers to make loan repayments via Text-A-Payment using GCash instead of sending collectors to collect the payments. Green Bank calculated that, by reducing the costs of field-based collection, it would be able to pass on the benefit directly to the customers to make it cheaper for customers to pay via GCash. In response, it agreed to reduce interest rates from a flat monthly rate of 2.50 percent to 2.00 percent, as well as reduce its service charges from 3 percent to 2.5 percent. Taking into account the cost of the GCash fee and SMS costs, this converts into a total savings to the customer of \$5.30, based on an average loan size of

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<sup>29</sup> <http://blog.mobilephonebanking.rbap.org/index.php/2008/09/25/mobile-phone-banking-services-expands-access-in-rural-communities/>

\$400.<sup>30</sup> For the bank, taking into account the reduced cost of collection as well as the reduction in the service fee and interest income, it is able to save \$16 for a loan client with an average loan size of \$400.

The rural banks also use an SMS gateway platform to remind customers about upcoming loan payments. This saves the banks money by not having to call customers to remind them about payments and has proven effective at reducing late payments. When a text message is sent before or on the payment date, repayment rates improved significantly with late payments dropping by almost 30 percent. Using SMS to remind customers to meet contractual savings goals has also proven effective.<sup>31</sup>

The example of SMEP in Kenya shows that there are various ways that MFIs can save money through m-banking. Credit officers spend less time in meetings, allowing them to reach more customers quicker and increase their productivity. Triple Jump Advisory Services estimates that there is a significant reduction in travel time and costs for loan officers, resulting in a doubling of capacity of a loan officer as more and more customers adopt the m-banking system. For institutions that still handle cash, this can reduce the time loan officers spend in bank branches and the risks associated with cash handling.

Some MFIs that have conducted a detailed cost-benefit analysis have concluded that m-banking will not dramatically reduce costs, as was the case with SKS in India.<sup>32</sup> With more than 5 million active borrowers, SKS is the largest MFI in India today.

SKS conducted a small m-banking pilot in 2007 for learning purposes; SKS knew it would not be able to roll out a full offering given the current regulatory constraints in India.<sup>33</sup> In partnership with Union

Bank in Andhra Pradesh, and using A Little World as its technology provider, SKS ran a pilot for 1,500 customers over three months where customers were able to open accounts, deposit and withdraw cash, and send funds through a small network of local shops. Although customers were initially excited about the project, the overall customer experience was discouraging, and few customers became active users of the service.<sup>34</sup>

Despite these obstacles, SKS is still intent on rolling out m-banking once regulation allows it. While its reasons are financial, the aim is more about revenue generation than cost savings. SKS estimates that loan officers can save about 15 minutes per meeting through m-banking. This is not substantial when total travel time and relatively low loan officer salaries in India are factored in. SKS could hire more loan officers for less money than the cost of implementing an m-banking solution.

So why does SKS still want to go ahead? Instead of using m-banking for customer transactions, SKS would serve as an agent for a bank, allowing SKS to access a new revenue stream. With its high numbers of customers, SKS expects the commissions involved to be significant. In fact, SKS expects that the new revenue generated by acting as an agent for a bank will be worth 10 times any potential cost savings. The end result could be reduced interest rates for customers.

The stories of MABS, SMEP, and SKS demonstrate that interest rates for customers can perhaps be reduced through m-banking, whether through cost savings or additional revenue generation. However, this will not necessarily happen with every organization and depends on many factors, such as methodology and the relative costs of technology

30 These calculations are based on an average loan size of 17,755 PHP (US\$400) with a 124-day loan term for all borrowers within or outside a 3 km radius.

31 <http://www.slideshare.net/MABSIV/using-s-m-s-technology-to-encourage-savings-and-loan>

32 Information on the SKS case study is from a presentation by Paul Breloff, then vice-president of Business Development for SKS, in New Delhi, India, in October 2008 at the Microfinance and New Technologies Summit.

33 The Reserve Bank of India restricts who can act as agents for banks.

34 SKS identified three challenges: (i) illiteracy as a challenge to the technology interface; (ii) customers' unfamiliarity with personal identification numbers, causing the security of the system to become vulnerable; and (iii) lack of a clear value proposition for customers to switch from cash to mobile banking

and labor in a particular market. In particular, this will depend on scale. Many MFIs have a small customer base and low volumes. The cost savings per transaction or customer will be relatively low, and so the economic justification for this new channel rests on high volumes of transactions. Each institution must do a thorough cost–benefit analysis to understand its key cost drivers and whether and how m-banking can help to reduce these.

## Conclusion

In the coming years, m-banking could very well revolutionize the way people manage their money in developing countries across the world as it has begun to do in Kenya. Many MFIs have spent decades training and equipping their customers to use financial services like savings and credit. Naturally, they are eager to take advantage of the potential of m-banking to bring convenient and low-cost access to financial services to customers' fingertips. In this paper, we asked several questions facing MFIs considering m-banking.

**Should an MFI in a country without any existing m-banking infrastructure create its own m-banking system?** Early experience suggests that developing an m-banking system is expensive, time consuming, and complex. There are many pieces to put in place (such as an agent network) beyond the technical solution. Only MFIs with significant managerial, technical, and financial capacity should consider this option. Very few MFIs have the right capabilities to create their own system.

**What role can an MFI play in a country with existing m-banking infrastructure?** Early experience suggests that MFIs can effectively use m-banking services to facilitate both loan repayments and deposits. This does not necessarily increase credit risk and can make the transaction process more efficient for both

the MFI and the customer. MFIs can also consider working as an agent in an m-banking system. This can be a good way for an MFI to learn more about how m-banking works without high investment costs. It allows customers to gain exposure to the system, helps MFIs differentiate themselves, and brings enhanced liquidity to their branch locations.

### What benefits can MFIs expect to gain by using m-banking?

- **Can m-banking help MFIs serve existing customers better?** The first and most obvious benefit of m-banking for MFIs is better customer service. M-banking can provide existing customers with flexibility in when and where they make loan payments and deposits, shorten group meetings, and decrease cases of theft and fraud.
- **Can m-banking help MFIs reach new customer segments?** Although reaching new customer segments (often in rural, hard-to-reach locations) is a commonly stated goal of MFIs embarking on m-banking, there is little evidence so far to demonstrate that this will happen, especially for microloans. With more experimentation, some MFIs may reach new customers, but MFIs should not base an m-banking business case around this proposition.
- **Can m-banking reduce costs for MFIs and for customers?** Early evidence suggests that m-banking can reduce operational costs for MFIs and that these costs can be passed onto customers in the form of lower interest rates. The degree of cost savings (or additional revenue generation), however, will depend on factors such as lending methodology and the relative costs of technology and labor in a particular market.

As MNOs and large banks take the lead in developing m-banking services in the coming years, there will likely be many more examples of MFIs using these

services in different ways. Both MFIs and their customers will benefit from the intersection of m-banking and microfinance, and these benefits will be greatest for MFIs who prepare strategically and consider carefully the timing and method of their involvement.

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