Aligning Expectations: The Business Case for Digital Financial Services

Best practice financial modeling for financial institutions

By Christian Rodriguez and Julia Conrad

mastercard foundation

IFC International Finance Corporation WORLD BANK GROUP

Creating Markets, Creating Opportunities

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Executive Summary

The spectacular expansion of financial inclusion in Sub-Saharan Africa over the past ten years would not have been possible if financial services providers didn't find a compelling opportunity in broadening the reach of their services. For the industry, the important question is whether there is a business case for financial inclusion? The answer is yes. M-PESA now represents 27 percent of total revenue for Safaricom in Kenya. For other mobile network operators, the share of mobile money is somewhere between 5-15 percent of total gross revenue. While some mobile money services do not yet break even on their own, they indirectly contribute to overall revenue through reduced churn (customer turnover) and increased customer satisfaction. For banks, opportunities for digital financial services (DFS) revenue are far beyond that of fee revenue. The opportunity to source deposits from a broader market can have positive impact on cost of funds, and moving transactions through digital channels reduces cost to income ratios; a key metric for defining the profitability of a bank. For any financial services provider embarking on a digital financial services venture, realistic assumptions and expectations about the business case are central to success. For market pioneers, assumptions about channel costs and income have had to be theoretical rather than based on evidence. For entrants to the market at this stage, this need no longer be the case.

IFC and the Mastercard Foundation conducted a four-year longitudinal study from 2014 to 2018 looking at nine financial institutions in Sub-Saharan Africa as they implemented DFS; mainly agent banking and mobile banking solutions. The purpose of the study was to understand strategic objectives of implementing DFS, the planning and implementation process, internal change management, the impact on business growth and sustainability, as well as determinants for scale, outreach and adoption of such services. This report aims to provide readers with an understanding of the business case for DFS and the role financial modeling plays when setting expectations for the new channel, including whether or not the first set of the DFS projections were met by the participating institutions. The findings serve as a basis for a set of informed best practice benchmarks that institutions can use for their own financial planning when implementing digital banking solutions.

When financial institutions (FIs) in Sub-Saharan Africa first decided to go digital in response to the rapid growth of mobile money solutions, many looked to mobile network operators to develop assumptions for their business models. This would include the number of agents needed, how many customers an agent would serve, and what average transaction sizes would be, for example. However, this study across seven markets on the continent has found that the DFS business case for MNOs is often not directly transferable to a banking environment. Instead, financial institutions need to develop tailored business models to their specific market contexts and unique capabilities. Based on this study, this report presents the key elements financial institutions need to consider when putting together a financial model for a digital channel, including detailing the main items related to capital investments and operating expense of the channel. To understand how to reach self-sustainability of a digital banking service, some key recommendations are stated in this report. These include adjusting DFS usage forecasts to the reality on the ground; not overcomplicating financial models; and generating solutions that address specific market challenges rather than blindly adopting processes used by other DFS providers.

While the outcomes of the study show that expectations for the adoption and usage of DFS in a banking setting may have been too high, there is an emerging body of evidence to show that there is in fact a business case for DFS. Indirect income through savings mobilization remains one of the most important opportunities for income, and the research has found that using agents can reduce the cost of doing a transaction by about 25 percent compared to branch transactions. The agent networks in the study were not as efficient as their MNO counterparts, and tend to do fewer transactions for fewer customers; however, they do have a much higher transaction value than initially expected and their activity rates are higher than for MNOs. Financial modeling should not be seen as a one-time exercise, and these new benchmarks can be used to help develop further iterations of business models as needed. Institutions should reassess original plans and make regular revisions based on adoption, usage, and actual growth of the digital service throughout its lifespan.

Introduction and Context

The use of DFS promises to expand banking outreach in a cost-effective manner. Digital channels and 24/7 service access are also expected to improve customer experience, driving usage and offering cross-selling opportunities. Nevertheless, the investment required for launching a DFS or a digital channel can be large. Investment decisions to implement digital services should build on comprehensive project planning, including considered financial projections on how the digital operations will progress over a given period. Initial financial planning that does not adequately account for factors such as income sources, expenses, client acquisition and adoption, among others, may result in financial institutions having unrealistic expectations for the channel's performance. Poor planning puts organizations at risk of making uninformed investment decisions, leading to bad decisions about asset allocation.

Realistic expectations for a DFS solution are built from a digital strategy to guide development of the business case and a financial model to assess the long-term viability of the project. As a nascent industry, one of the main challenges for building the business case and financial model for a digital banking channel is the lack of sufficient information on industry benchmarks. Benchmarks are important to craft assumptions about the eventual performance of the channel. Most institutions participating in the study that this report is based on were first-movers in their respective markets, with some even having to guide their markets towards the development of a DFS industry.

About the IFC and Mastercard Foundation Longitudinal Study

IFC and the Mastercard Foundation conducted a four-year study to extract and share lessons from nine microfinance institutions in Sub-Saharan Africa as they implemented digital channels, mainly agent banking and mobile banking solutions. This research report presents the institutions' experiences in developing the business case for DFS and their corresponding financial projections.

It is important to consider the following:

- Eight institutions implemented agent networks. Six have deployed, or are planning to deploy, mobile banking solutions.
- The agent networks at the nine institutions are at different stages of maturity: two institutions have mature solutions older than five years; three have agent networks with around three years in operation; and three have solutions in pilot mode.

Digital first movers are often forced to rely on their own assumptions or the experience of other ecosystem players, MNOs in this case, to guide the development of their first business model. This approach misses, to some extent, the differences in the business nature and culture of the different players of the DFS ecosystem. For example, the MNO business model for mobile money agent networks calls for a mass-market approach whereas financial institutions look to serve specific market niches through their agent banking channels. This is particularly the case when developing assumptions related to outreach, customer transaction patterns such as transaction size and frequency, service offering, and revenue generation.

Interviews conducted and information collected for this study lead us to the conclusion that many FIs followed "conventional wisdom" in believing that digital channels – mainly agent and mobile banking - are cheap to implement and inherently cost-effective because they lack the physical and human infrastructure required to expand through traditional bank branches. However, many of the participating institutions came to realize that although upfront investments for digital channels are not as large as for branches, other recurring operational expenses, such as commissions, technology platform maintenance and channel management, can represent significant ongoing costs for the institution.

The study also observed that some FIs were driven by the ambitions and excitement of digital transformation when developing assumptions for their digital service. To obtain the internal buy-in for their DFS projects and when presenting the project in front of key stakeholders, digital ventures tended to be "oversold" with projections over-stated, especially in terms of cost savings, adoption, and revenue opportunities.

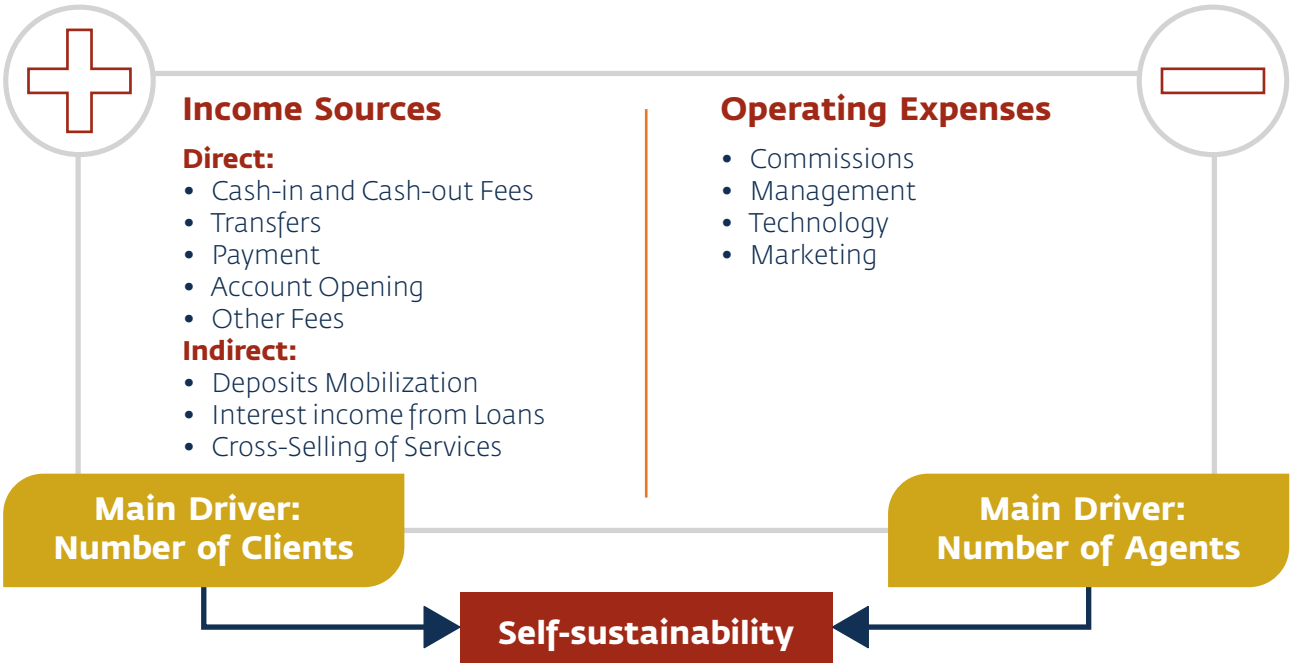
Defining Income and Expenses for a DFS

When a financial institution implements a new digital channel or solution, it is important to have a clear implementation plan. A standard implementation process has four main work streams or phases. These are: (1) strategy, (2) technology considerations, (3) partnerships and strategic alliance considerations, and (4) implementation[1]. As part of the strategy definition, a key activity is to create the business case[2] for the digital solution. The financial institution should put together a financial model to cover the following aspects: (a) income sources, (b) expenses[3], and (c) client acquisition and adoption rates.

This section presents the different income and expense items a practitioner needs to consider for putting together the financial projections to assess the business case of DFS. Since most of the financial institutions in the study set up agent banking from scratch, we are using the income and expense information for agent banking to outline the income and expense items. Additionally, the information in this section can be used to assess the self-sustainability of the digital channel as presented in Figure 1.

1. *See IFC, "Alternative Delivery Channels and Technology Handbook", 2015: https://www.ifc.org/wps/wcm/connect/5d99c500477262e89844fd299ede9589/ADC+Handbook_ISBN.pdf?MOD=AJPERES*
2. *In the case of a digital financial service, there are three main types of business cases: one for the financial institutions offering the service, one for the end-customers using the service (i.e. microfinance clients); and one for third-parties (i.e. agents, strategic technology partners, among others) that either enable the service or play a key role in its delivery. For purpose of this field note, the business case refers to the financial institution.*
3. *The expenses consider both the initial investments - including capital expenditures - as well as the recurring expenses of the changes.*

Figure 1: Agent Banking Operating Self-Sustainability Calculation



Income

Income sources can be categorized in two groups: direct and indirect. **Direct income** refers to the fees that a financial institution can charge clients for transacting through the digital channel. The financial institution should consider market conditions - such as what competitors or similar digital financial service providers charge - to set up a pricing structure that can both contribute to covering the operational costs of the service and foster customer uptake and usage.

In our study, the participating financial institutions with an agent network generate direct income from the following transactions:

Cash-out fees: All institutions with an agent banking channel in the study introduced such fees. For those FIs not charging for cash-ins or not offering additional fee-based services, the cash-out fees represent the gross of the fee income generated by the channel.

Cash-in fees: One institution in the study charges customers to deposit money into their accounts. Although charging customers for cash-in is not common in similar services (i.e. MNO's mobile wallets), for this institution this measure significantly contributes to covering the channel's main operational costs and to reach break-even.

Transfers: Fees charged for person-to-person transfers, either over the counter or through a deposit to an account, are another alternative to generate fee income from a digital channel. Four institutions in this study offer the service via agents, but fees generated by this service represent only a small portion of the channel's overall income.

Payments: Two institutions in the study offer some type of payment service (i.e. bill payments, school fees, government-to-people, payroll) through their agent networks. In most cases, the fees received for these payments represent a marginal portion of the income generated by the agent banking business.

Account Opening: A portion of the income fees generated for the account opening should be allocated to the digital channel if new client acquisition, account opening, and KYC collection is completely done through the digital channel. At the time of the study, none of the institutions were making revenue from account opening. However, two institutions in the study were exploring options to charge customers for account opening through agents.

Other fees: Financial institutions can consider charging customers to perform balance checks, view mini-statements, or for general account maintenance. Two institutions in the study charge customers a small fee to check account balance at agents. None of the institutions in the study are currently charging maintenance fees for accounts that are directly linked to the agent banking channel.

Quantifying **indirect income** can be a challenge because it requires financial institutions to look beyond the standard income sources of the digital service as well as being able to quantify indirect income attributable to the digital channel. Most of the institutions in the longitudinal study reported difficulties identifying indirect income sources as well as calculating and deciding on the portion of overall income to allocate to the digital service. Based on information from the nine participating financial institutions, it is possible however to identify three main potential sources of indirect income for the agent banking channel:

Deposit mobilization: Savings mobilization was a strategic motivation for the implementation of an agent channel for most of the institutions. Through deposit mobilization, banking institutions can benefit from the difference between the lending and savings interest rates - also known as intermediation - and use a cheaper source of funds to support lending activities. Including these reduced costs of funding associated with savings intermediation

in financial projections, can strengthen profitability and hence the business case for a digital service. From the observations in the study, two institutions tracked the portion of cash-ins for savings. One institution did not see any direct increase in savings for agent banking users over the course of the study. The other, however, reported a good level of savings mobilization through the agent channel, increasing the amount of savings mobilized through the channel by seven-fold from January 2017 to December 2017.

Interest income from the digital channel: Although many institutions have difficulties attributing savings mobilization to the agent banking channel, all institutions report that most cash-in transactions are done for loan repayments purposes. However, none of the financial institutions allocate a portion of the interest income of the portfolio served through the agents to the profitability of the agent banking channel. The logic behind allocating a portion of the loan portfolio's interest income to the agent banking channel is to recognize the contribution of this digital channel to the delivery of loans. In two of the participating financial institutions in the study, the agent banking channel established itself as the main outlet for loan repayments. It can be inferred that without the channel, servicing those loans might not be possible or could be costlier for the institution.

Cross-selling of services: The ability to cross-sell other products should also be considered as a potential indirect income for a digital channel. For example, the distribution of nano-loans through an agent network generates interest income to the financial institution. Part of that interest income should be allocated to the agent network, especially when it is the main channel for distributing and servicing those loans.

The calculation and analysis of indirect income streams for the digital channel should be used in the context of understanding the profitability of the channel and its progress towards break-even. However, the indirect income calculation might not be used for formal accounting purposes, such as putting together financial statements or reports to regulatory bodies.

Expenses

As with any type of new venture, the financial modeling of a digital channel must consider the initial investments, including capital expenditures, for setting up the channel as well as the ongoing expenses to keep it running. Many of the initial investments will be one-off costs.

To quantify the **initial investment** of an agent banking channel, there are four main cost categories to take into consideration:

Technology: Any investments related to the acquisition of the hardware and software necessary to offer the digital channel. Investments in technology platforms can be considered as capital expenditures, to reflect on the balance sheet rather than as direct expenses on the income statement.

Human resources: Initial expenses for building the DFS team. This could cover head hunting fees for scouting a digital channel champion and training existing personnel to develop internal capacities. Institutions should also consider the costs of any consultant work to help in the design of the strategy or initial set-up of the channel.

Market research: This relates to expenditures for market research activities to better understand users' attitudes as well as existing DFS usage patterns. This could also include upfront market research for the design and prototyping of new digital products. All institutions in the study invested in market research prior to launching a digital service.

Legal fees: Any expenses related to obtaining regulatory approvals and licenses. This might include the cost of creating a separate company to host the digital channels, as in the case of countries that require a financial institution to have a separate company to run an agent banking business. Three financial institutions in the longitudinal study had to set up different companies to host agent banking networks to comply with local regulations. Additionally, these fees can include the cost of processing contracts for each agent, bill payment aggregators, partnering with MNOs, etc.

Another set of expense items refers to the recurring cost of running a financial institution's digital channel, most commonly referred to as operating expenses. The items to consider for modeling the operating expenses are similar in nature to those for initial investments, but they vary in frequency incurred. The following categories for **operating expenses** were used by institutions participating in this study:

Commissions: Some digital channels such as agent banking, automated teller machines, and card payments, require FIs to pay a commission for each transaction done through a third party. For the eight participating institutions with an agent banking channel, commission expenses paid to agents played a key role in quantifying operational costs. The data from the study shows that commission expenses tend to be one of the largest costs of an agent banking channel. As a case in point, one institution with an agent network in operation for more than three years and with a high number of transactions flowing through the channel had a commission expense representing over 60 percent of the channel's overall operating expenses. For other study institutions, commission expenses tend to be the second or third expense category in size, after technology and agent management costs.

Technology: This refers to any ongoing fee, such as software licenses or acquisition of hardware, including point-of-sale systems or tablets. Technology operating expenses includes any type of annual maintenance fees for the digital channel software as well as any functionality improvements that require a development fee.

Human Resources for Agent Management: This cost includes the salaries and incentives for the staff to manage the digital channel, including increased HR costs for customer service support, as well as technical and transaction rectification support. Any incentive given to branch staff to promote usage of the digital channel should also fall under this expense category.

Marketing: This refers to the cost of running above-the-line and below-the-line marketing campaigns to promote the adoption and usage of the digital channel.

Financial Projections Analysis

As part of this study, the original financial models of the participating institutions were consolidated and streamlined under a single format to compare the different channel expectations and assumptions against each other. Six of the nine participating FIs had sufficient information regarding initial assumptions and agent network performance to analyze and compare against performance to date. From this comparative analysis, the following findings aim to advise future bank practitioners when developing projections for digital channels.

Use adequate complexity in your financial projection approach

Initial financial planning practices for the digital channel differed greatly between the institutions in this study. Two institutions did not embed the digital channel projections into the financial performance outlook of the whole institution, but treated it as a stand-alone business line; thereby neglecting the likely impact the new delivery channel would have on the institution's overall operations. The impact of digital channels on banking operations can differ in magnitude and depends on the specific DFS strategy chosen by the financial institution. Hence, there is the need for a holistic business view when preparing financial projections to capture all the potential income sources and expense items of the digital channel. The above section "Defining Income and Expenses for a DFS" provides details on the role income and expenses play in business modeling.

A digital business model does not only affect the financial institution itself but can also have implications for some of the actors in the institution's financial ecosystem, such as agents and clients. Two institutions opted to model the interactions of the digital solution within the whole ecosystem, evenly accounting for its effects on all potential partners and ecosystem actors in separate business case sections. Although this approach is comprehensive and most complete, it may lead to a financial model that is difficult to comprehend with a lack of focus on key performance targets and areas most relevant to the FI. Hence, when developing the financial model for the channel, it is advisable to concentrate on the institution's own outlook, with a DFS channel integrated into the overall banking operation. Projection on other key ecosystem actors should only be considered when it is necessary to build a specific scenario for its interaction with the channel.

The review of different financial projections done by the participating institutions in the study led to the conclusion that complexity does not necessarily improve the reliability of the projection. FIs should aim to balance details and depth when forecasting the effects of digitization on the business, with additional information only when appropriate to sensitize the financial model for different growth scenarios. To facilitate the revision process that leads to new iterations of the business model, it is also important to keep good track of all assumptions that the initial projections are based on. This includes to list and explain these properly, such as FI customer growth rates, credit portfolio growth, customer activity, among others. Good record-keeping also ensures smooth hand-over of the business model in case of staff turnover.

Cost Savings and Other Benefits

The study shows that six financial institutions in the study experienced some level of benefits from the channel, including cost savings and growth opportunities. In terms of cost savings, the agent banking channel contributed to cost reductions in the following areas:

Cash-handling: Three institutions reported that the agent network contributed to a reduction in the costs associated with cash-handling, mainly of transportation, insurance and dealing with counterfeit bills.

Branch operational expenses: Due to less client traffic at branches, four institutions were able to reduce the number of tellers needed for handling transactions, thus lowering the operational costs of branches.

Transactions: Two institutions have benefited from lowering the cost of transactions. By comparing the costs associated with conducting a transaction at agent and at a teller, one of the FIs in the study identified that agent transactions were $0.31 cheaper. Similarly, the other institution benefited from a 17 percent costs savings per transaction when using agents for deposit mobilization.

Also, it is important to note that agent banking has significantly contributed to the growth - in terms of clients and portfolio - of five of the institutions in the study. Three institutions in the study stopped relying on physical branch market expansion because they found agent banking to be a more cost-effective way to improve both market penetration and expansion.

Make realistic assumptions on partnerships and product offering

Most DFS strategies build on the successful establishment of partnerships with other actors in the ecosystem. The expectations on the partnership affect the products and services offering planned for the new DFS, influencing the assumptions for client outreach, value-added services, additional revenue streams, etc.

For several of the institutions in the study, optimistic assumptions on the successful collaboration with other DFS ecosystem actors led to ambitious expectations on product and service offerings for the digital channel. Failed or long-lasting discussions led to several partnerships not translating into reality. For the agent banking roll-out, five institutions planned to partner with other financial institutions. Out of these five institutions, three leveraged large-scale agent networks for cash-in and cash-out transactions. The partnership assumptions of the institutions included external agent network providers that were not realized as planned, leading to a heavy shortfall in terms of customer outreach and business volume against business plan expectations.

In the case of four FIs, collaboration with MNO partners was partially fulfilled on the product level, allowing DFS customers to transfer money between their bank accounts and mobile wallets. Only one FI in the study limited its own channel projections to a basic "minimum agent service offer", which is usually cash-in and cash-out, without relying on the successful establishment of any alliances with other

industry actors. This approach may be an option for FIs interested in testing the DFS waters while keeping the investment cost low and relying on the expertise of other players to deploy the service. This should be regarded as the most conservative option when developing partnership assumptions. The study found that financial institutions have limited bargaining power with market players such as MNOs, and negotiations are time consuming. The most optimistic assumptions should anticipate a long negotiation process before any agreement to collaborate.

Developing scenario-based financial models

Though time-consuming, the development of different partnership and channel uptake scenarios may be the most complete approach to account for different product and service offerings, client adoption and usage. Additionally, sensitivity testing helps to determine which factors can have an impact on the business case. For this purpose, financial institutions could take into consideration three main scenarios:

A base case to forecast for the actual services that are guaranteed or technically viable to be offered through the channels. Client adoption and usage, as well as expansion of the channel, should be at industry benchmarks. Refer to the Agent Banking Benchmarks section for a set of initial agent banking indicators to consider. The FI should consider partnerships that are already signed or confirmed.

A worst case to account for slow roll-out of services as well as clients' low adoption and usage of the digital service. The effects of long and difficult partnership discussions might be included under this scenario.

A best case to model all pipeline services offered through the digital channel, assuming high client adoption and usage. Under this scenario, the effects of partnerships that have been signed as well as partnerships that are still in development should be considered.

FINCA, Democratic Republic of Congo
Comparing initial expectations against realities

FINCA is regarded as a pioneer in DRC for its operational digitization[4]. Since initial roll-out in the third quarter of 2011, its agent network has grown to 887 active agents, accounting for around 74 percent of the total cash transaction volume of the institution (as of December 2017).

The institution's initial agent channel planning projected a five-year outlook. For the purpose of this analysis, these were compared to the FI's performance actuals in Q3 2016; the end of the projected period. Overall, the expected results of many performance indicators are mostly in the range of the actual performance: seven out of ten results deviate only +/- 50 percent from anticipated values. In the context of modeling assumptions, this deviation should be regarded as relatively precise. The results were achieved with a number of registered agents that is four times larger than planned, and hence the anticipated average transaction amount per agent has not been reached (in August 2016, every registered agent conducted on average 237 cash transactions per month against an initial estimate of 1092). This figure does not yet take into account that FINCA anticipated to partner with an MNO to evenly leverage its existing agent network for cash deposit transactions, a partnership that has not been realized.

In terms of direct agent network expenses, staff costs reached more or less the anticipated range. Agent commission expenses, on the other hand, were around 60 percent higher than expected, although the number of agents and the transaction volume were considerably smaller. We can conclude that in the case of FINCA, the agent banking channel has held initial expectations in terms of outreach and transaction volume, but only with help of a much larger agent network and higher incentives in the form of agent commissions.

Reversing an original plan to have all transactions at agents free of charge, FINCA has introduced fees on some customer transaction types. Although these covered only around 36 percent of the agent commission and management expenses in 2015 and 2016 (only 28 percent when adding setup costs for new agents into the direct cost figure), these should still be regarded as unforeseen income that partly outweigh the higher expenditures for commissions.

4. *FINCA was the first banking institution to deploy an agent banking network in 2011. It has also launched an own mobile banking application in August 2017. A bank account – mobile wallet integration is in pilot.*

Expectations and Reality

DFS performance expectations are often higher than what reality can deliver. More realistic channel projections of the digital solution can help to correct misperceptions around digital delivery channels and can greatly support future DFS practitioners in their project planning stage. The analysis below uses the most commonly projected agent banking indicators, such as outreach, agent and customer activity, business size, and direct revenue; as well as cost factors of the agent banking channel, as benchmarks. The benchmarks were compared against the actual performance of the study institutions as of December 2017, or against the performance at the end of their projection period in case of two institutions. The following implications were drawn from the analysis:

Registrations do not translate into customer activity[5]: Three institutions reached customer outreach targets in terms of registered customers, with one FI exceeding its target by 400 percent. One FI attained only 4 percent of its expected channel registration goal. As for customer activity, the median estimate for the FIs in the study was 46 percent active on a 30-day basis. However, the actual median activity rate as of December 2017 was only 24 percent, only half of the expected value, but in line with what has been reported for mobile money deployments elsewhere[6]. The conversion of registered customers to active customers is thus not as high as expected.

Agent recruitment and activity targets deserve more attention: Agent network size is on average 62 percent larger than planned. Institutions actively recruited agents to drive network growth. However, inactive agents should be regarded as a cost factor rather than a revenue source, and it is important to account for the cost of inactive agents when developing financial model assumptions for the new channel. This can be done by assigning an activity rate to the base of enrolled agents. Only one institution in the study projected agent activity in its financial model. Neglecting agent inactivity may lead to unexpected resource requirements for agent setup and management, and also to misleading expectations for transaction volumes and revenue streams. Agent activity rates, therefore, deserve close monitoring against initially projected targets.

Customer transaction targets were out of reach: A promising agent business case requires agents to achieve specific customer traffic levels. Even when considering the "minimum service offer", such as agent cash transactions, none of the FIs reached their initial expectations on transaction volume and value. When looking at the median, 16 percent of the agent cash transaction volume was reached, or 17 percent of value. This finding goes hand-in-hand with unmet expectations on activity rates for customers and agents, suggesting that it requires more efforts to incentivize customer activity.

Cash-in transaction behavior differs from the MNO model: The assumptions around the cash-in share (vis-à-vis cash-out) for agent transactions are important for two reasons. First, agent cash-in transactions are usually free for customers but generate operating costs in the form of agent commissions and agent liquidity management on the side of the institution. Second, unbalanced cash flows require higher efforts to support agents in their liquidity management, through an agent overdraft facility for example. As for the institutions participating in this study, the median actual cash-in share as of December 2017 was 84 percent higher than the projection of 61 percent. Only two institutions overestimated the share of deposit transactions, both by around 25 percent. In the case of MNOs, the share of deposit transactions more or less equals the share of withdrawals, and the agent cash and electronic money float requirements are better balanced. These misperceptions around the customer transaction behavior at banking agents is further adding to the shortfall of direct agent fee revenue at many MFIs because cash-in transactions are usually free, while efforts for liquidity management at agents may have been underestimated.

Agent commission and management costs as main operational expense factors: Agent channel transaction volume expectations were not achieved. However, direct expenditures on agent commissions and management were often met or even surpassed. Higher-than-expected agent management fees coupled with lower-than-expected transaction volume indicate that the FIs underestimated the level of effort required to monitor and manage the agent network. In a similar way, the commissions necessary to incentivize agents to push the channel were underestimated. This may be due to the fact that competition around agent recruitment has been fierce in many markets, which drives up the commissions offered to agents.

Given the scarcity of agent banking benchmarks at the time of financial projections, some institutions built their own assumptions for the initial financial modeling of the digital channel based on the implementation of similar solutions at other ecosystem players such as MNOs. The institutions missed distinctive features of their operating model when relying on other players, such as targeting niche markets instead of mass markets, limited market share and bargaining power. Additionally, we find that activity and transaction volumes for the channel are mostly below expectations, while direct costs are in line or above the projections. Therefore, from the analysis of the performance of agent networks at the FIs in the study, it can be concluded that agent banking was usually costlier than expected and its usage lower than forecasted. Hence, FIs sought alternative revenue sources than originally planned, e.g. by offering new products through the channel.

5. *Here, an active user (agent) has completed at least one transaction within the last 30 days. The number of customer accounts that have performed at least one P2P payment, bill payment, bulk payment, cash-in to account, cash-out from account, or airtime top up from account in the last 30 days. Balance inquiries, PIN resets and other transactions that do not involve the movement of value and do not qualify a customer as active.*
6. *See IFC, "2017 State of the Industry Report on Mobile Money" report: https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2018/02/GSMA_State_Industry_Report_2018_FINAL_WEBv4.pdf; the global mobile money account 30-day activity rate in 2017 was reported as 24 percent%*

Figure 2: Financial Projection Versus Actual

How far away are the realities of the study institutions from the expectations in their initial financial model?

- within +/- 25%
- within +/- 50%
- within +/- 75%
- within +/- 100%
- within +/- over 100%

	Bank 1 After 38 months	Bank 2 After 60 months	Bank 3 After 12 months	Bank 4 After 41 months	Bank 5 After 39 months	Bank 6 After 60 months
# Registered agency banking customers				not projected		
# Active agency banking customers						
Account activity rate				not projected		
# Agents						
# Active agents		not projected	not projected	not projected	not projected	not projected
Agent activity rate		not projected	not projected	not projected	not projected	not projected
# of Banking staff				not projected		
# Agent transactions (ci/co)						
Agent transaction volume (ci/co)		not projected				
# Cash in						
Cash in share						
Fees income (ci/co)	projected as free	projected as free				
Direct agent commission expense (ci/co)						
Agent management cost				not projected		

LAPO Microfinance Bank, Nigeria
Reassessing growth projections after piloting

LAPO Microfinance Bank is a leading microfinance institution in Nigeria with over 3 million clients. The institution provides loan services mainly through the microfinance group lending methodology as well as different types of savings account options. The institution embarked on the creation and launching of an agent banking channel in mid-2015, piloting the channel during the first quarter of 2016. Due to the regulatory need to create a separate company to host the agent banking business, the institution had to delay any further deployments of the channel until the last quarter of 2017.

In terms of the five-year growth planning for the agent channel, the initial main assumptions were: a) Nigeria's population size of over 180 million[7] offered an opportunity to serve a still largely untapped market; and b) LAPO[8] was able to significantly grow its client base in recent years despite strong competition and tough market conditions. Therefore, its agent banking business needed to consider a large number of agents to serve LAPO's existing number of clients and potential new ones.

In doing so, the initial projections for the base case of LAPO's agent banking channel considered mimicking the size of an MNO's agent network. Thus, the institution estimated it needed a large number of agents and a transaction mix with multiple services to reach up to the equivalent of three clients' monthly transactions per agent. The institution's goal was to increase ten times the yearly growth rate of registered clients, during a five-year period. Client activity rate was estimated for 40 percent in Year 1, reaching almost 90 percent by Year 5. The number of registered agents was anticipated to reach about 7,700 agents by Year 5. The table below summarizes the original five-year projections for clients, transactions and agents.

LAPO's original five-year projections

	Year 1	Year 2	Year 3	Year 4	Year 5
Number of registered clients	308,215	991,614	1,861,297	2,776,616	3,863,219
Growth rate – registered clients	Base year	222%	88%	49%	39%
Number of registered agents	1,541	2,938	3,818	5,553	7,726
Growth rate – registered agents	Base year	91%	30%	45%	39%
Customers/agent	200	337	488	500	500
Number of customer transactions per month	3.0	3.0	3.0	3.0	3.0
Number of transactions per agent per day	23	39	56	58	58
Average number of active customers	128,064	641,909	1,438,736	2,343,905	3,350,000
Activity rate - customers	42%	65%	77%	84%	87%

After the 2016 pilot and a second pilot at the end of 2017, the institution reflected on the challenges experienced. It decided to reassess the growth of the agent banking channel and to create a new financial model. The reassessment retained the assumption for strong channel growth, but this time linked growth to the realities of a financial institution. The growth in the number of clients of the channel was scaled back for the first two years to allow the institution room for perfecting processes, technology, and product offering, prior to a larger roll-out of the agent banking service in years three to five. In terms of number of clients, the projections now predict a total number of registered customers at around 2.1 million with an activity rate of around 30 percent by Year 5.

Additionally, some findings of this study served as reference points to rework the projections. The institution used the study benchmark for agents' activity rate (60 percent) to estimate the average activity rate of 67 percent. To show the transition from a young agent network to a more mature one by Year 5, the institution used the study benchmarks for average number of customers per agent (100) and range of monthly transactions per agent (between 130 and 300). The number of customers per agent was set at 21 for Year 1, reaching over 90 by the end of Year 3, and then getting up to 130 by the end of year 5. The number of transactions handled by agents was changed from a daily indicator in the original projections to a monthly one and it was set to around 100 transactions by year 5.

LAPO's example shows the need to readjust a channel's projections when new information becomes available. Growth and financial modeling should not be seen as a one-time exercise, but financial institutions should reassess and make revisions to projections throughout the life of the digital channel. Doing so is also a good way to monitor progress and account for variations in the channel's objectives and business case.

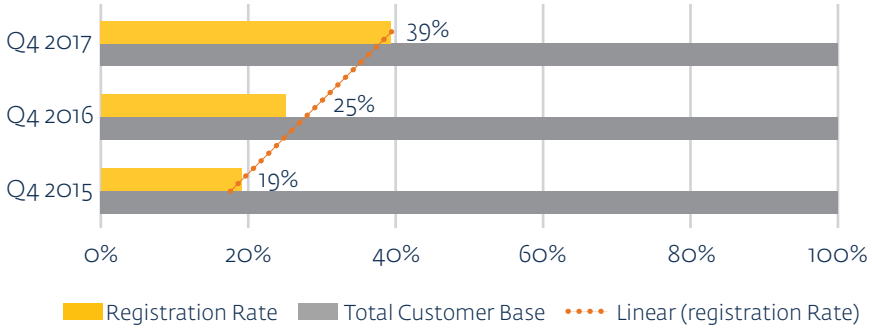
7. *See World Bank Database, "Population, total", retrieved from: https://data.worldbank.org/indicator/SP.POP.TOTL?locations=NG*
8. *The microfinance business segment of LAPO has high growth targets, including over 7 million microfinance clients by 2021.*

Agent Banking Benchmarks

We developed agent banking benchmarks based on monthly channel performance data reported by the financial institutions participating in the longitudinal study. The benchmarks can be used as a reference point for financial institutions interested in building their own assumptions for a financial model for agency banking.

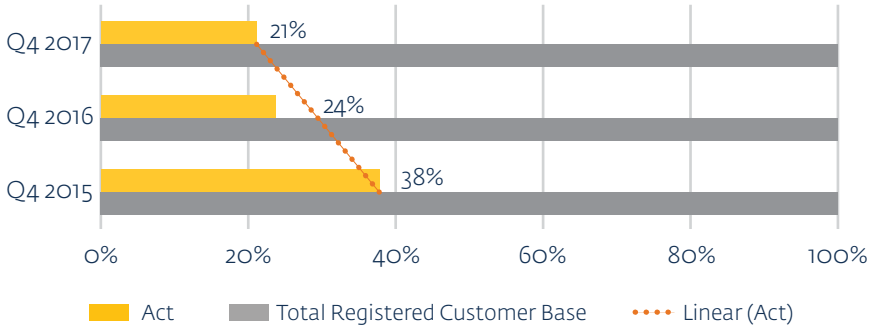
Figure 3: Agent banking benchmarks

Customer - Quarterly Average of Agent Banking Registration Rate



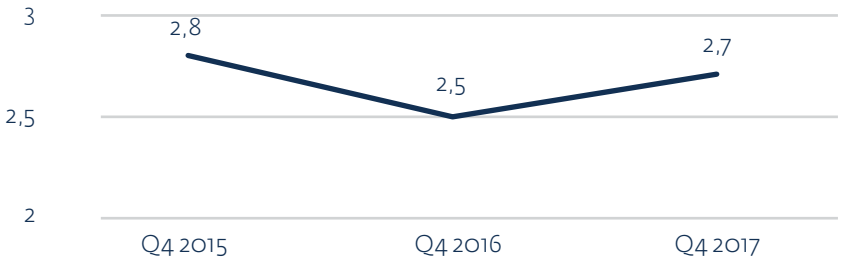
The share of the total FI customer base registered for the usage of agent banking has increased considerably over the course of the study. In December 2017, the shares of customers registered for the services ranged from as low as 22% to 53% among the participating FIs.

Customer - Quarterly Average of Agent Banking Activity Rate



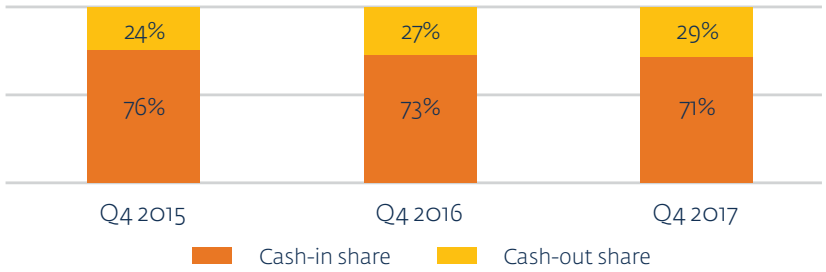
Even more important is the share of registered customers actively using the digital channel (i.e. performing at least one transaction in 30 days). Although we have observed a rising trend in registrations, adoption has been declining. As of December 2017, only around every fifth registered agent banking customer was using the services. The activity rate ranged between 14% and 31% among the FI participants.

Customer - Quarterly Average of Agent Banking Transaction Frequency



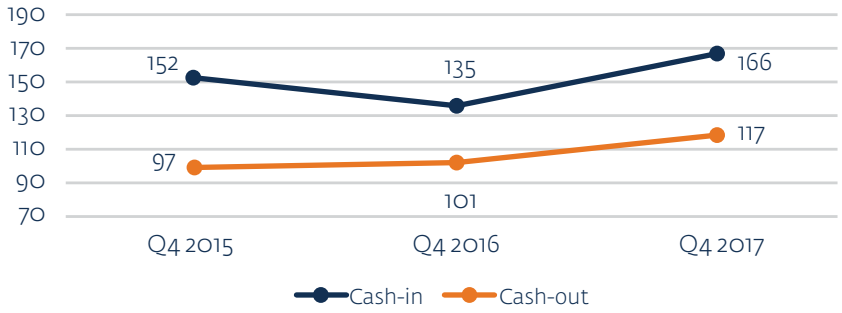
Customer transaction frequency is calculated as total volume of monthly agent network cash-in and cash-out transactions divided by the number of active agent customers for a given month. Over the data collection period, the average across the study FIs has remained quite low, varying between 2.5 and 3 transactions per active user per month.

Customer Usage - Quarterly Average of Agent Banking Cash-in and Cash-out Shares



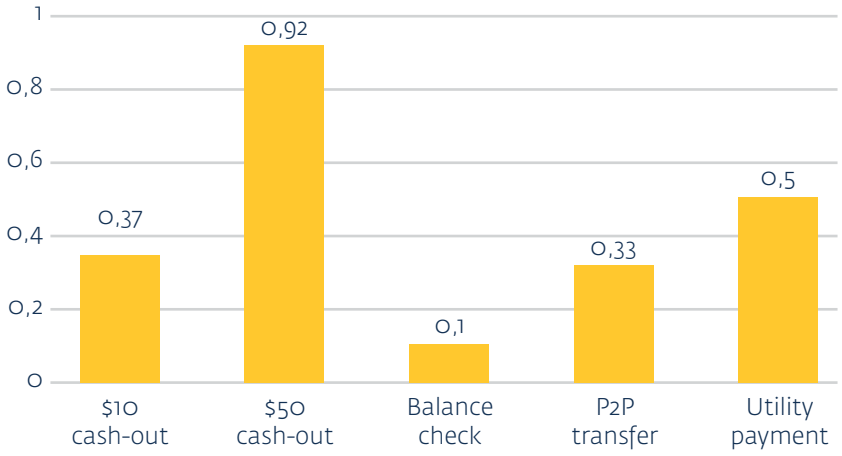
Customer usage is defined as the mix of transaction types done at the agent. For all networks in this study, agents primarily conduct cash transactions, i.e. cash-in and cash-out. Some already offer value-added services such as transfers and bill payments, but these transaction types then still represent less than 5% of all agent transactions.

Customer Usage - Quarterly Average of Agent Transaction Amount (USD)



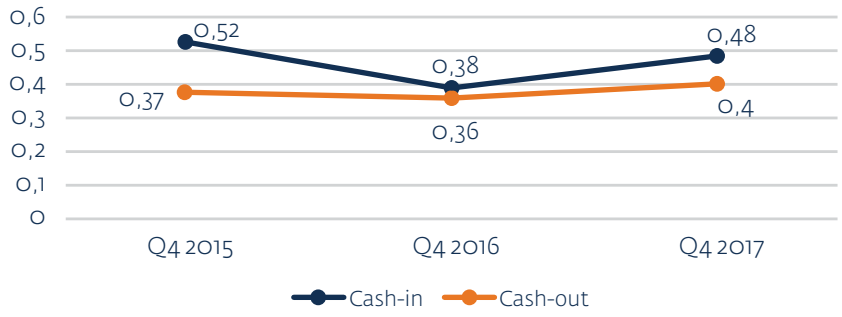
The average agent transaction amount is obtained by dividing the monthly agent transaction value by volume. When differentiating between different transactions types, one can observe how these amounts vary (here, cash-in amounts have been considerably higher than cash-out amounts).

Average fee income per transaction[9] (USD)



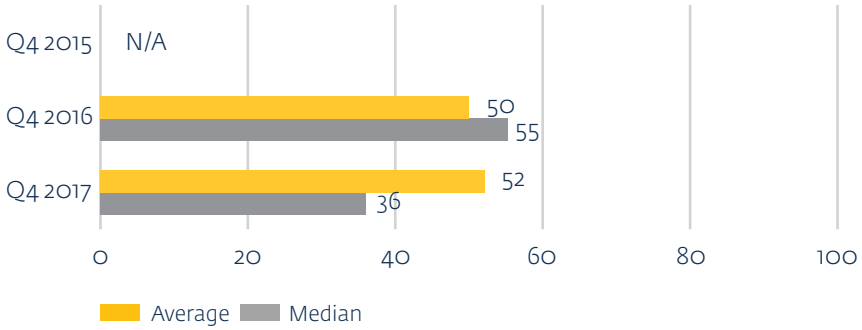
Similar to commissions, finding the right pricing for transactions has been challenging. All institutions reported to have used MNO pricing as orientation for initial price setting. Fees were revised less frequently than commissions. When the agent networks were launched, none of the institutions charged customers for cash-in transactions. Over the course of the study, two institutions decided to charge for deposit transactions. One of those institutions retracted its decision and one continues to charge a fee. Some institutions have started offering balance enquiry, P2P transfer or utilities payment services at agents.

Agents - Quarterly Average Comissions Expenses per Transaction (USD)



Agent commission expenses represent a large operational cost factor for agent networks. Mature networks, with more than three years in operation, report spending more than 60% of their operating expenses on comissions. Defining the right commission structure has been a struggle for most of the study institutions, and many of them have undergone several adjustments since launch of the channel.

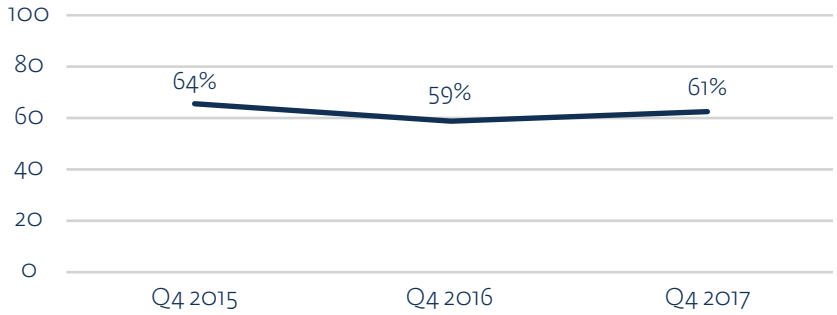
Agent Management HR Expenses per agent (USD)



Agent network management expenses were calculated as total agent network management staff expenses for the month divided by the respective number of active agents. All five agent networks have proven to be efficient in managing their operations with a small team. The size of the agent network management team fluctuated from 5 to 43 as of end 2017 and the ratio to active agents ranged from a low 1:55 to a high 1:4.

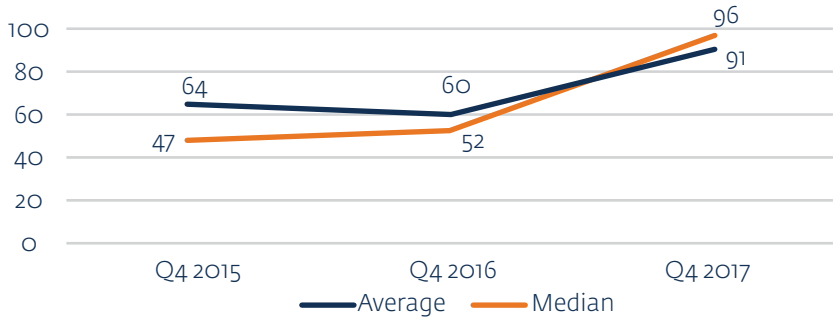
9. *Here, we considered all 8 active agent network channels in the study.*

Agents - Quarterly Average of Activity Rate



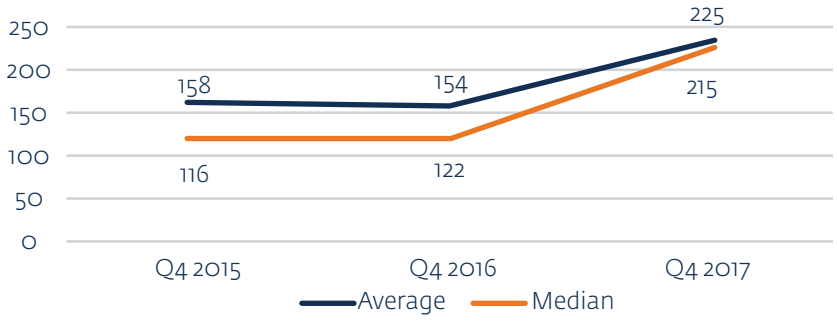
The agent activity rate is defined as the number of agents handling at least one transaction per month over the total number of registered agents. Average agent activity rate has been more or less stable at around 60% over course of the study.

Agents - Quarterly Average of Active Customers per Active Agents



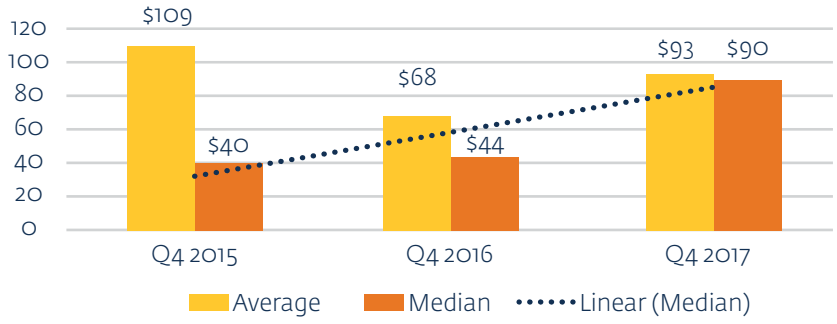
The number of active customers per active agent is a popular indicator in the DFS industry and gives an idea of an agent network's capacity utilization. The rising trend for the study FIs is a positive sign. As of end 2017, one active agent served almost 100 active customers.

Agents - Quarterly Average of Transactions per Month



The number of transactions per month greatly vary with age and size of the agent networks. On average, the number of transactions conducted by active agents has been rising considerably over 2017. Mature and large networks now reach a monthly transaction number of active agents of around 250 to 300. Young networks, with less than three years in operations, and small agent networks, reach between 150 and 250.

Agents - Quarterly Average of Monthly Commission income (USD)



The average monthly commission income is calculated as total agent commission expenditure divided by the number of active agents. Discrepancies among the institutions were large, with periods when agents were making over USD 300 on average. Still, the median tells us that the income has been growing for most of the institutions, suggesting that the agent value proposition is becoming increasingly attractive.

It is important to note that it was not possible within the framework of this study to develop a benchmark indicator for the level of savings mobilized through the agent channel due to the way agent cash-in transactions were set up in the technology platforms of most financial institutions[10]. However, it can be noted that the size of the overall deposit portfolio amount of the FIs with the three largest agent networks significantly grew over the reporting period, in some cases more than doubling. Still, there is not enough evidence to link this growth to the agent banking channel.

In terms of how these banking benchmarks compare to the ones for the MNO industry, we noted three main differences:

I. Small agent network size, but higher agent activity rate: The agent networks of the participating FIs are small in size - between 200 and 1,500 registered agents and between 100 and 900 when only counting active agents - and concentrated mainly around bank branches. Even the larger networks in this study are small when compared to MNO networks, whose network of active agents are on average more than ten times larger. The fact that agent network size of the study institutions is smaller should not be considered detrimental to the business case or to the potential opportunities of the agent banking channel. The smaller size agent networks reflect the more targeted market niche that these financial institutions intend to serve. In addition, agent activity rates of over 60 percent show that FIs outperform in terms of management and stimulation of their networks. The model hence builds on good quality and lower scale vis-a-vis MNOs' large networks with lower transactional activity, which generally have agent activity rates below 40 percent.

II. Higher average transaction amounts: Since the agent networks of the participating institutions have primarily served as an outlet for the repayment of loans, the average transaction amount tends to be higher than those for an MNO, whose average agent transaction amount in December 2017 was approximately US$16 in Sub-Saharan Africa[11]. This fact represents a higher commission per transaction to agents. However, a higher commission can only be obtained during specific dates of the month as most repayment dates for these institutions fall at the end or at the beginning of the month, requiring proper planning for agents to cover higher liquidity during these peak periods to avoid missing income opportunities.

III. Cash-ins lead the transaction mix: The cash-in transaction share at FI agents is significantly higher and stood at around 71 percent in Q3 2017. For MNO agents, the distribution between cash-in and cash-out is more or less equal. This has direct implications on the need to support the agents with liquidity management. A higher demand for deposits requires higher e-money float at the agent, and the institution has to make sure that respective tools are in place to support the agents in this aspect.

Baobab Group, Senegal and Madagascar Finding approaches for reaching break-even

Baobab Group, formerly known as MicroCred Group, is a credit-focused network of FIs, targeting micro, small, and medium sized enterprises. Two institutions of this network are participants in this study: Baobab Senegal and Baobab Madagascar. Although they operate as separate entities, the two FIs benefit from being part of the larger Baobab Group by sharing common resources, such as technology platforms and a product development team. When the Group decided to test two new approaches to make its agent networks sustainable, Baobab Senegal was used as the incubator of the ideas.

The first approach included redefining the fees clients would pay to use the services of Baobab Senegal's agent network by introducing a cash-in fee in the last quarter of 2016. At the time, the notion of charging for cash-in transactions was new and not used at any of the institutions in the longitudinal study[12]. Although the initial reactions of customers to the new cash-in fees were negative and led to a decline in transactions of around 30 percent, Baobab Senegal decided to continue with the fee and roll it out to all its agents in Senegal. After more than a year with the new cash-in fee and improving the way this new fee is communicated to clients, Baobab Senegal is seeing the bold strategy bear fruit by reaching operational break-even of the agent banking channel for the first time in the last quarter of 2017.

However, when it was the turn for Baobab Madagascar to test the new cash-in fees, the story had a different ending. After a few weeks in pilot, Baobab Madagascar decided to stop charging clients for cash-in as it was adversely affecting the number of transactions and image of Baobab Madagascar's agent network. Baobab Madagascar decided to explore another approach to reach break-even: to cross-sell nano loans. The product was previously tested by Baobab Senegal, and later also introduced in Madagascar. The nano loan product is exclusively offered through agents. In case of both institutions, it has by far exceeded expectations. In the pilot year 2017, Baobab Senegal disbursed 29,222 nano loans. Baobab Madagascar disbursed over 3,600 nano loans in December 2017 alone, representing an interest income of US$ 29,017, with 90 percent of this interest income allocated to the agent network. The additional income from nano loans contribute to cover a good amount of agent network expenses – including agent commissions – and pave the path to making the agent channel self-sustainable.

The Baobab Senegal and Baobab Madagascar examples show that there is not a single approach for reaching the break-even point of a digital channel. Any approach needs to take into account different market conditions and should incorporate proper change management mechanisms if the approach involves a major change in behavior or additional costs for the customers.

10. *The set-up of a single transactional account at most of the agent banking platforms does not allow to differentiate between cash-in transactions for savings purpose and cash-in transactions for other purpose, f.e. loan installments. Only three institutions were able to make this distinction. One institution is showing some positive trends in deposit mobilization, but its agent banking channel was still in pilot during the reporting period. Another institution reports that there was no significant increase in savings from agent banking customers.*
11. *See "2017 State of the Industry Report on Mobile Money" report: https: //www.gsma.com/mobilefordevelopment/wp-content/uploads/2018/02/GSMA_State_Industry_Report_2018_FINAL_WEBv4.pdf; in 2017 the average mobile money transaction amount in SSA was at USD 16, the global average was at USD 17.5*
12. *Since then two more study FIs are considering charging fees for cash-in transactions.*

Conclusions

When the financial institutions in our study launched their digital financial services channels, they did not have much previous market experience to guide them. As agent banking pioneers in their markets, the only available benchmark data for financial modeling were from mobile network operators. By participating in our study, these financial institutions have now shared with others what was missing for them. The list of agent banking benchmarks provided in this study should be a helpful guide to financial institutions that now enter the field. This is a generous contribution to the broader creation of a market for accessible, affordable and sustainable mass market financial services in Sub-Saharan Africa. In conclusion, we list below some key lessons drawn from this study and the implications these can have for the implementation of digital financial services in the region and beyond:

A DFS **planning** stage should include a considered and careful financial modeling exercise that builds on realistic and informed assumptions, and accounts for different partnership and channel uptake scenarios. Such models require a trade-off between simplicity and accuracy: overcomplicated financial projections can affect the visibility of the financial planning exercise, and it may even confuse priority indicators the new channel should meet. It is important to properly identify and highlight the key information necessary to assess the viability of the channel. Sensitivity testing may eventually help to determine the factors that most impact the business case.

A **financial modeling** exercise can also contribute to a self-sustainability assessment by helping to understand the direct and indirect income streams, as well as expenses, of the digital channel. Such assessments also allow institutions to monitor profitability of the channel and its progress towards break-even.

Assumptions should draw from experiences in similar contexts, i.e. similar market environments and peers. MNO industry benchmarks may be misleading for financial institutions in aspects of agent network growth, customer transaction amounts, and transaction mix. This study provides a list of agent banking benchmarks institutions can refer to. The list of benchmarks covers customer usage and adoption, as well as agent activity and commission revenue.

For the financial institutions participating in this study, initial **expectations** on agent banking were only partly met. Channel activity and transaction volumes were mostly below expectations, while direct costs, i.e. agent management staff salaries and commission expenses, were in line or above the forecast. We conclude that agent banking adoption was lower and costs higher than projected. While channel registration targets were often met, targets for customer activity and transactions were out of reach. Targets on agent recruitment and activity deserve better attention and should be part of every financial model.

Theoretically, the potential to **mobilize savings** through a digital channel is high. However, due to system limitations and country characteristics[13], that potential could not properly be quantified for most of the financial institutions in this study. Two institutions in the study, however, have data that allows tracking the savings trends of customers, with one bank showing that savings collected through the digital channel multiplied by seven in a twelve-month period. Additionally, it was noted that for three banks the size of the total savings portfolio more than doubled after the launch and roll-out of their digital channels.

Reaching DFS channel **sustainability** requires out of the box thinking: innovative approaches combined with clever product and service offering can enlarge direct channel revenues and boost the recognition of the DFS channel. The approaches adopted by the study institutions to enhance channel sustainability involved overcoming common MNO belief that clients should not be charged for cash-in transactions, and the design of products that are only delivered and served through agents. The need to think innovatively and "out of the box" should also apply to the financial modeling exercise, e.g. by allocating cost savings from agent deposit mobilization, or revenues from the loan business, to the agent network.

13. *In countries where people are used to saving regularly through informal services such as susu collector in Nigeria and Cameroon, agents are useful to mobilize savings; but in places where there is no culture of savings collection, such as Madagascar, mobilizing savings through agents can be challenging.*

AUTHORS

Christian Rodriguez
Christian is a digital financial services specialist with the World Bank Group. He has over 15 years of experience working with financial institutions in Africa, Asia and Latin America in the design and implementation of digital banking solutions.

Julia Conrad
Julia is an Operations Analyst at IFC's Financial Institutions Group, based in Dakar, Senegal. She has been working in the financial inclusion and banking space in China and across Sub-Saharan Africa for the last three years.

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Contact the Publisher:
Anna Koblanck
AKoblanck@ifc.org
+27(0) 11-731-3000
IFC, Sub-Saharan Africa
14 Fricker Road, Illovo, Johannesburg