

# DIGITAL ACCESS: THE FUTURE OF FINANCIAL INCLUSION IN AFRICA

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## ACRONYMS

ADC	Alternative Delivery Channel	ISO	International Organization for Standardization
AFSD	African Financial Sector Database	IT	Information Technology
ARPU	Average Revenue Per User	KES	Kenyan Shilling
API	Application Programming Interface	KPI	Key Performance Indicator
ATM	Automated Teller Machine	KYC	Know Your Customer
B2P	Business to Person	LAPO MfB	Lift Above Poverty Organization Microfinance Bank
BCEAO	Central Bank of West Africa (Banque Centrale des Etats de l'Afrique de l'Ouest)	M-banking	Mobile Banking
BOI	Banking Operations Intermediary	M-wallet	Mobile Wallet
BVN	Bank Verification Number	MFI	Microfinance Institution
CEO	Chief Executive Officer	MM	Mobile Money
CBA	Commercial Bank of Africa	MSME	Micro, Small and Medium Enterprise
CBN	Central Bank of Nigeria	MTN	Mobile Telephone Network
CFA	West African Franc, or Central African Franc	MNO	Mobile Network Operator
CGAP	Consultative Group to Assist the Poor	MVNO	Mobile Virtual Network Operator
CRM	Customer Relationship Management	NFC	Near Field Communication
DFS	Digital Financial Services	OTC	Over the Counter
DJ	Disc Jockey	P2B	Person to Business
DVD	Digital Versatile Disc	P2P	Person to Person
E-banking	Electronic Banking	PC	Personal Computer
EFT	Electronic Funds Transfer	PIN	Personal Identification Number
EMI	e-Money Issuer	POS	Point of Sale
E-money	Electronic Money	PSP	Payment Service Provider
E-wallet	Electronic Wallet	QR	Quick Response
E-warehousing	Electronic Warehousing	RCT	Randomized Control Trial
FCMB	First City Monument Bank	RFP	Request for Proposal
FSD	Financial Sector Deepening	SACCO	Savings and Credit Co-operative Organization
FSP	Financial Services Provider	SGBS	Société Générale de Banques au Sénégal
G2P	Government to Person	SIB	La Société Ivoirienne de Banque
GDP	Gross Domestic Product	SIM	Subscriber Identification Module
GhIPSS	Ghana Interbank Payments and Settlement System	SME	Small and Medium Enterprise
GSM	Global System for Mobile Communications	SMS	Short Message Service
GSMA	GSM Association	TZS	Tanzanian Shilling
HCD	Human Centered Design	UBA	United Bank for Africa
IBO	Intermediary in Banking Operations	UOB	United Overseas Bank
ICT	Information and Communication Technology	USD	United States Dollar
ID	Identification Document	USSD	Unstructured Supplementary Service Data
IFC	International Finance Corporation	WAEMU	West Africa Economic and Monetary Union
IMF FAS	International Monetary Fund Financial Access Survey	WAMZ	West Africa Monetary Zone



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OUR PRICES!  
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TRANSFERS

*Mercy Trinidad Lutepu (left), a Zoona agent who owns three outlets, with a teller at one of her booths in Lusaka, Zambia, on 10 January 2018.*



## FOREWORD

### Financial inclusion is one of Africa's great success stories over the past decade.

The launch and growth of digital financial services has led to an unprecedented increase in the number of people enjoying access to formal financial services. Today, Africa is home to more digital financial services deployments than any other region in the world, with almost half of the nearly 700 million individual users worldwide. Mobile money solutions and agent banking now offer affordable, instant, and reliable transactions, savings, credit, and even insurance opportunities in rural villages and urban neighborhoods where no bank had ever established a branch. This is, quite literally, banking at your fingertips – for everyone. It is revolutionary.

The impact, however, extends beyond the individual. What makes a difference for a small-scale entrepreneur or a smallholder farmer translates into broader gains for society. Ten years after the breakthrough of digital financial services in Sub-Saharan Africa, we are seeing evidence of this. Field studies show that

access to mobile money services has increased daily per capita consumption levels of households, lifting them out of extreme poverty. Mobile money services have changed lives – for example, helping women to move from subsistence farming to business occupations and sustainable livelihoods. In total, our partnership with 14 African financial services providers from 2012 to 2016 have resulted in 7.2 million new digital financial services users on the continent (a 250 percent increase from the baseline), 45,000 new banking agents, and \$300 million in monthly transactions.

More than ever, we know that financial inclusion is a means to an end. It is a catalyst for equitable development and inclusive economic growth. Our ambition with the Partnership for Financial Inclusion has always been to improve the capacity of the financial sector to better serve all people in Africa, and to share the lessons learned from those efforts with the global development community. By working with pioneers of low-cost financial services across the continent to design, develop, and test new technological approaches and innovative business models, we have highlighted both the opportunities and the challenges in furthering financial inclusion.

This publication brings to the fore the voices of Africa's consumers, as well as those of financial services industry leaders. We believe that they offer deep and thoughtful analysis for everyone working in this area of international development. We trust that you will find this a valuable read.

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Mastercard Foundation

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CEO  
International Finance Corporation (IFC)

*Rokiatou Doumbia, owner of Café Vert in Abidjan, Côte d'Ivoire, with Steve Bedan, MTN MoMo Pay sales team supervisor, as she learns to use a point-of-sale device.*

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*DFS = digital financial services  
= financial services accessed  
and delivered through  
digital channels*

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## A WORD FROM THE ADVISORY COMMITTEE

The Partnership for Financial Inclusion was born in 2012 from a common objective of IFC and the Mastercard Foundation to identify and promote workable solutions to Sub-Saharan Africa's need for cost-effective and commercially sustainable financial services.

At the time, only about a quarter of adult Africans enjoyed the benefits of access to the financial tools required to be able to grow small-scale businesses, plan for future household expenses, make investments in schooling and health, and cope with emergencies. As the program approaches its close in 2018, the situation has improved beyond expectations: 43 percent of the population in Sub-Saharan Africa are now financially included, and in countries such as Kenya, Tanzania and the Democratic Republic of Congo, the financial inclusion rate has more than doubled over the past six years. In hindsight, it is easy to see that the program was launched at the right time, in the right place. Sub-Saharan Africa has led the evolution of digital financial services in emerging markets, and continues to do so.

While the numbers are remarkable, the effort of the industry to reach previously unbanked people, such as low-income earners, small-scale entrepreneurs and the rural population, is even more so. Since 2012, we have had the privilege to work alongside fourteen market-led financial service providers, including microfinance institutions, banks, mobile network operators and payments service providers, to catalyze innovation and shift the financial landscape in Sub-Saharan Africa. It has been tremendously exciting work; designing and building innovative business models for financial inclusion alongside visionary local entrepreneurs, bold industry practitioners, and tireless and dedicated field staff. Breaking new ground is not easy and there have been several challenges along the way. Many of the providers we work with spend every working

day pursuing the opportunities and benefits offered by digital financial services, putting the customer at the center of development. We have learned that it is important to embrace failure, and to operationalize the knowledge gained in the process. In the early stages of the development of a new market, what matters to one provider often matters to all. For the market as a whole to evolve, successful collaboration and communication between market actors and regulatory authorities can make a marked difference.

The impact is equally impressive. To date, the Partnership for Financial Inclusion has reached over 7 million new financial services users across Sub-Saharan Africa, from Senegal to Tanzania, from Nigeria to Zambia. That is the equivalent of the adult population of a small country. The number of new users brought into the formal financial system is expected to grow beyond the close of this specific initiative, aimed primarily at catalyzing early market development for long-term impact. In addition to extending access to financial services, the clients and partners of the program have built expansive networks with small-scale entrepreneurs as banking agents. Each new user represents a new introduction to the formal financial system. Trust, we have found, is the critical element that brings new users to adopt mobile money solutions and agent banking. As growth and innovation accelerate, it is imperative that responsible finance and the rights of the consumer are guaranteed.

The overarching objective of the Partnership for Financial Inclusion has been to help create a market for accessible, affordable

*A woman using one smartphone while charging a second one, at Espace Stablé, a popular restaurant in Abidjan, Côte d'Ivoire, on 5 December 2017.*



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**Baobab**  
RÉSEAU MICROFINANCE

Soahanginirina Razafindrahanta, a teller at a Baobab Bank outlet in Antananarivo, Madagascar, on 16 February 2018.

and sustainable financial services in Sub-Saharan Africa. Critical to this mission is knowledge sharing. Since the start of the program, the team has pursued a robust research and learning agenda, harnessing operational lessons learned and conducting original research to help build industry expertise for greater financial inclusion. The popular Digital Financial Services Handbooks series offering practical guidance to market actors are published in English, French and Spanish, in response to demand also beyond the continent's borders.

This publication, *Digital Access: the Future of Financial Inclusion in Sub-Saharan Africa*, collects much of the experience and insights earned by the Partnership program over the past six years. It offers readers the story behind the African digital financial revolution, as experienced by some of those who have made it happen. Most importantly, it brings together the knowledge gained throughout the implementation of the program for the common good and for the future. It is our hope that the case studies, market overviews, industry opinion, research focuses and impact features, will give readers a rich idea of the deeper fabric of the financial market in Sub-Saharan Africa. Great strides have been made in the drive towards broader financial inclusion, but there is still much to be done and many challenges ahead. Now is the time to build on what has been achieved so far. To expand financial services to the last mile will require investments in merchant and agent networks, innovation along agricultural value chains, and the development and launch of products that meet an increasingly nuanced demand from an even broader variety of users, such as entrepreneurs, merchants, smallholder farmers, youth and women.

In closing, we would like to take this opportunity to recognize all those who have contributed to the success and achievements of the Partnership for Financial Inclusion. In particular, thank you to the Bill & Melinda Gates Foundation, the Development Bank of Austria, OeEB, the UK government through the Department for International Development, DFID, and Switzerland's State Secretariat for Economic Affairs, SECO, for their contributions to some Partnership projects.

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## Digital financial services are key to the future of Africa's banking sector

By Riadh Naouar

IFC Head, Financial Institutions Group Advisory, Sub-Saharan Africa

The impressive growth in financial inclusion in Sub-Saharan Africa over the last few years has been driven primarily by mobile money and agent banking. By and large, the growth in traditional financial institution accounts lag behind. Where they do increase, it often appears to be on the back of the mobile money revolution. The message is clear: the future of the financial sector on the continent is digital.

While East Africa has long been the star performer in terms of the evolution of digital financial services, West Africa is the new growth market. Not only in terms of reach, but also for innovation. Banks in the sub-region are increasingly forming partnerships with mobile money operators to offer accessible and affordable services beyond the historical target market, and are investing in their own digital operations to build new ways of banking. Fintechs have sprung up from Dakar to Lagos, and the regulatory environment continues to improve. There is every reason to believe that the early success of East Africa will be replicated and even surpassed in West Africa.

There is a need in the broader industry across the continent to shift to the next generation of digital products. A broader, more multi-faceted market is asking for more sophisticated and relevant products beyond person-to-person payments. There are evident opportunities to develop digital banking, savings and credit products, as well as the digitization of value chain financing and merchant payments. This can significantly improve customer benefits and usage, as well as long-term sustainability for providers.

The customer is the new boss in town. As the lines between providers are becoming increasingly blurred, users don't necessarily care about who or what kind of entity the provider is, as long as they can access the services they desire. Banks, microfinance institutions, mobile network operators, payments service providers and fintechs are all exploring competing services across the region. Understanding mass market customer needs will be the key to success.

More than ever before, it is an open field. The true winner is the African consumer, who is no longer excluded from the benefits of financial services.



## The business case for digital financial services

By Lesley Denyes

IFC Program Manager, Partnership for Financial Inclusion

**Digital Financial Services:** a broad range of financial services accessed and delivered through a variety of digital channels, including payments, credit, savings, remittances and insurance.

**Agent Banking:** a third-party business that is engaged to provide customers with a selection of financial services, often including deposit and withdrawal, on behalf of a financial service provider.

**Mobile Money:** a type of electronic money (E-Money) that is transferred electronically using mobile networks and SIM-enabled devices, primarily mobile phones. The issuer of mobile money may, depending on local law and the business model, be an MNO, a financial institution or another licensed third-party provider.

**Mobile Wallets:** an account that is primarily accessed using a mobile phone, usually provided by a non-bank and linked to a pooled bank account which holds the associated funds.

**Bank-to-Wallet:** transactions between bank accounts and mobile wallets.

On a recent trip to West Africa, I visited some agents of a local tier-one bank with about one million customers and 1,000 proprietary banking agents. The agents showcased a new customer registration app, allowing them to sign up new bank customers at agent locations: small-scale grocers, pharmacies, beauty parlors and the like. The user experience was seamless, allowing previously unbanked people to become formally financially included in just a matter of minutes. The app is secure and easy to use, and doesn't require the customer to remember anything, as it uses one-time PINs for authentication. The interface has an intuitive, well designed and graphic approach, and the app also allows agents to monitor and manage some of their key business metrics. It was one of those beautiful moments when you see all the pieces of the puzzle fall

into place at once; technology, people, and purpose. In the past decade, the evolution of an entirely new market for accessible, affordable and sustainable digital financial services has led to the inclusion of millions of people in Sub-Saharan Africa into the formal financial sector, and opened up entirely new opportunities for the financial sector to expand and innovate to support broad-based inclusive economic growth. Taking transactions out of the bank was the first step. The ability to directly sign up new customers for banking services in the field will allow for an even quicker and broader expansion of financial inclusion, where new customers can also be onboarded and educated by agents for deeper and better financial services. This is the future, and it is already here.

In 2011, the New York Times published an article on the budding digital financial services industry that has become a classic among industry practitioners and experts. It described the emerging DFS industry as 'a goat rodeo'; a chaotic space with a variety of actors drawing in different directions. Many of us found it a hilarious description; only because it was absolutely true. Even before Kenyan pioneer M-PESA gained traction and global recognition, there were a multitude of early deployments across the globe that attempted to marry technology with financial services to reach the unbanked. Few were successful; some failed spectacularly. A variety of actors were involved, from tech companies to mobile network operators, to microfinance banks, to consulting services, non-governmental organizations, donors and development institutions. The concept of fintech was just emerging, and while the term Big Data was coming into peoples' vocabulary, few understood the subject or its potentially huge implications to drive the expansion of financial services. Many regulators were observing as entirely new actors entered the financial sector, unsure of how best to step in to protect customers and funds, while still allowing for these new innovative forces to expand access to financial services. The industry has come a long way since, and become a much more orderly space with rules to the game. Almost all financial institutions and mobile network operators on the continent are employing DFS in some way, shape or form today. On the whole, the market is finally beginning

to bring together technology and purpose for all involved; positively impacting on the lives of millions of people on the continent, while transforming the financial sector into a broader-based, more efficient and sustainable industry.

The Partnership for Financial Inclusion was launched in 2012, at a time when the market was still very much in the making. As a joint initiative of IFC and the Mastercard Foundation to expand microfinance, advance digital financial services, and build industry knowledge for the common good, the Partnership has had the unique ability to draw on operational lessons learned from the full spectrum of industry clients across the continent: banks, MFIs, MNOs and payments service providers. To date, the fourteen partners of the program have collectively achieved 7.2 million new registered DFS users, 44,600 agents, and \$300 million in transactions at agents per month. While 90 percent of this achievement has been through banks and MNOs on an actual basis, it is interesting to note that the rate of growth has been relatively much higher for MFIs. MFIs have grown their DFS users almost 4,000 percent, compared to MNOs and banks, which have only grown by 100 percent in the same period.

In parallel to supporting on-the-ground DFS implementations, we have run an extensive research and development program to probe and further research the business case for DFS and the impact of digital financial inclusion on development. We have learned a lot. Our key lessons can be summarized as six headline insights for financial services providers wishing to launch digital channels, or for market actors already active in the field but struggling to reach full potential.

### There is a business case for financial inclusion

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 MNOs, 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 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 the Partnership program, we have followed nine commercial microfinance institutions in Sub-Saharan Africa offering agent banking over four years, and found that transactions through agent networks cost 25 percent less to provide than branch teller transactions. Regardless of competitive pressure or customer demand, this alone translates into huge incentives for financial institutions to move to digital.

### Strategy is the foundation for success

There are different routes to engage with the opportunities offered by digitization, depending on the needs of the institution. A digital strategy is a critical component of the overall organizational strategy and should be guided by the business' vision, mission, and overall strategy, as well as market conditions. For banks, there are three basic engagement models: become a digital bank, launch singular digital channels or products, or launch subsidiaries to run digital banking operations. Offering digital financial services does not have to be an all or nothing approach. All three routes to digitization allow institutions to move forward on a digital journey, with large or small investments, taking large or smaller risks. There is growing interest in the banking industry to move towards an omni-channel approach, where digital is simply part of the general business and covers everything from back-end customer relationship management to front-end mobile applications for customers, open access to fintech partners and a seamless user experience for clients through all digital channels. To get there, it is necessary to make key investments in technology and culture, and both have proved difficult to change.

### Successful DFS is about technology and requires strong change management

In terms of technology, legacy systems often hinder growth and innovation. Existing IT systems are often patchworks built over time, and it can be a very painful exercise to dismantle and replace them with the necessary technology for a comprehensive digital approach; previous solutions

represent large investments and costs, time and effort, as well as key decisions made by management (many of which may not have been very well thought through). Once this is done, however, a bank can begin to build, not only for today but for the future. Tomorrow's banks will require very sophisticated technology and data warehouses that will allow them and partners in the market to initiate, authenticate, transact and settle in real-time to allow customers to, for example, borrow money to buy an asset directly through e-commerce, and providers to track and monitor the asset, and even remotely stop it from working if loans are not repaid. In terms of institutional culture, painful change is often also key to success when existing banks go digital. Innovation requires staff that trust that it is fine to test out new ideas and create new solutions without fear of failure. In the industry interviews in this publication, you will find several of our partners highlighting the need to acquire buy-in from the entire organization for DFS deployments, and how critical internal communication is to achieve this. They have lived this. It is especially the case with existing staff who may feel threatened by the change, often branch staff fearing branch closures following the launch of an agent network. It is helpful then to keep in mind that branch staff are often key to a successful agent network.

### The future needs products

The initial use case for DFS in most markets have been person-to-person payments, a service which clearly and rapidly has met with a huge demand. This should come as no surprise, as most economies on the continent are migrant and network economies in which domestic remittances have played a key part for a long time. As markets mature, demand for other products and services emerge. There's been enthusiastic uptake of digital loans and savings in some markets, for example, and in all markets there is a certain amount of 'informal' digital merchant payments taking place, as users pay for goods and services by making direct deposits to small-scale retailers. Rapid iteration of products and services require an environment in which an institution can listen to and respond to customer needs, understanding what the new mass market users find useful. This requires clear leadership from management, and for new cultural practices to be embodied at every level of the institution in terms of physical presence of work space, performance metrics used, and in all communications. Over the past six years, we have also learned from our Partnership projects that those providers that have been most financially successful are those that diversify their products. In the times of the 'goat rodeo',

### Our projects



Icon	Category	Project Number	Project Name
	BANKS	1.	CalBank Ghana *
		2.	FCMB
		3.	Fidelity Bank *
		4.	Cooperative Bank
		5.	Banque Atlantique Mali
		6.	Banque Atlantique Burkina Faso
		7.	Banque Atlantique Côte d'Ivoire
	MNOs	8.	Airtel Uganda
		9.	MTN Côte d'Ivoire *
		10.	Tiga Cash Ghana *
		11.	Vodacom Lesotho *
		12.	MTN Cameroon *
		13.	Vodacom Mozambique
	PSPs	14.	Zoona Zambia *
	MFIs	15.	AB Microfinance Bank Nigeria
		16.	AccessBank Madagascar *
		17.	AccessBank Tanzania *
		18.	Advans Cameroon *
		19.	FINCA DRC *
		20.	Lapo Microfinance Bank
		21.	Baobab Madagascar (formerly Microcred) *
		22.	Baobab Senegal (formerly Microcred) *
		23.	UOB Rwanda
	MARKET LEVEL PROGRAMS	24.	Côte d'Ivoire Market Program *
		25.	Tanzania Interoperability Project

\* Partnership for Financial Inclusion, funded by the Mastercard Foundation

it was widely believed that DFS was about scale: build it, get the scale, and you will succeed. However, the experience has been different: the more customers you have, the more it is going to cost you. We have watched the full variety of providers grow their user bases substantially over the last few years, and we now know that scale does not equal success. Within the current IFC portfolio of DFS advisory projects in Africa, marginal expenses of transactions represent on average 70 percent of total transaction costs; meaning there is actually very little diminishing costs. If a provider is not able to reduce expenses by scaling to break even, then DFS providers need to earn more per customer, often referred to as ARPU (Average Revenue Per User) in the MNO world. This is done by cross-selling, and to do that the industry is going to need more products and more partnerships to offer these products. First-generation products included P2P transfers, basic savings, loans and bill payments. Second-generation products include payments through platforms, such as merchant payments, e-commerce, and supply chain management, as well as data-driven lending backed by these platforms. Many providers are partnering with emerging fintechs to offer these services, as they generally fall outside of the core business. APIs, sandboxes, and interoperability will further enable the development of these second-generation models.

#### **To manage growth you have to manage risk**

When we wrote the Digital Financial Services and Risk Management Handbook (see page 144), we were surprised to find how few institutions in the industry had proper risk management frameworks in place to handle DFS risk. Most providers had limited their risk approach to fraud management, and one provider even stated that DFS had reduced their risk because they outsourced it to agents. DFS risk is far more complicated than that and extends far beyond operational and technical risks. In order for the financial inclusion industry to be able to capitalize fully on the benefits of digital financial services, it is important that the accompanying risks are understood and adequately addressed. In this fast-evolving field, it has become apparent that what matters to one provider matters to all, as large cases of fraud, for example, affect not just consumer trust in one provider, but in the market and promise of digital financial inclusion as a whole.

#### **Data is a key tool for innovation and growth**

DFS providers are particularly well-positioned to take advantage of data and analytics to expand customer base and provide a higher-quality service. Digital customer acquisition and transaction management has built a wealth of data on customer behaviour that can now be used for a specific purpose, such as credit scoring, but can also be employed more generally to increase operational efficiency and drive greater value for customers. Whatever the goal, a data-driven DFS provider has the ability to act based on evidence, rather than anecdotal observation or in reaction to what competitors are doing in the market. Data analytics, including techniques such as predictive modeling, can be used to better understand the profile of customers to provide better customer service and innovate new products. For example, we find existing customers that have a high probability of being small business owners but are using retail products. We can use the information to build better products and communicate to them about products that better fit their needs, or even develop new products based on a market demand. Behavioral patterns can also be monitored to predict changes in repayment behavior or SIM churn, so that providers can reach out to customers to incentivize retention. All of this is leading to more efficiency for the provider and better service for the customers. As markets in Sub-Saharan Africa mature, this will be increasingly important, not just to gain competitive edge, but also to ensure that the services and products developed for this region meet the needs of users here.

Following the initial chaotic stage, the DFS industry in the region has gone from strength to strength. These days we are certainly seeing a convergence of purpose and benefits for users and providers alike, built on ever more sophisticated technology and business models. The customer registration application of the agents in West Africa that I mentioned earlier is an impressive step forward. There are many other similar developments around the continent, among our Partnership partners and in the broader industry. The convergence of DFS providers is increasingly blurring the lines between banks, MNOs and fintechs. As banks move to omni-channel approaches, where customers have a seamless experience in accessing their accounts through multiple channels, and MNOs launch their own savings



*Edmei Rajaonary, a customer of Envie de Manger, a restaurant belonging to Voahirana Mamy Ravelonoro, a longtime customer of Baobab Bank in Antananarivo, Madagascar.*



and loan products or even acquire banking licenses, there is a convergence of the customer experience, and users will soon no longer be able to distinguish between banking with a bank or a non-bank. From the user's perspective, it is all about accessibility and trust. While older generations on the continent may view DFS with some skepticism (something we have certainly found evidence of in our four-country ethnographic study into the social, cultural and historical attitudes to DFS adoption), 77 percent of the population in Sub-Saharan Africa is younger than 35 years old and they are likely to welcome the ability to access financial services outside of traditional bank branches.

What does this mean for the future? Will it be possible, one day, for a smallholder farmer in rural Tanzania to stand with his phone in his field and borrow the money to pay for a plough, without even requiring an actual bank service? Yes, and not only that, but mobile apps can deliver the plough using sharing economy apps, such as mLorry in Kenya, that sells excess shipping capacity in trucks through an Uber-like app. Fintechs would be able to improve their collateral management and reduce credit risk by using Internet-enabled sensors that can remotely disable the plough if there is non-payment of the loan.

Financial inclusion is not an end in itself, it is a means to an end. Greater access to formal financial services for people in emerging markets – access to savings, loans, insurance and payments – will serve as a catalyst for real sector development. A study that we conducted in Uganda shows that 63 percent of the most active mobile money users in Uganda are small-scale entrepreneurs, and that 42 percent of them use DFS for business transactions. DFS is a game changer for the financial sector and for its new customers in emerging markets alike, and it will also impact the broader economy.

This publication gathers a large part of our operational and research learnings from a variety of providers and a number of markets across the continent, offering readers

a broad but granular view of the state of DFS in Sub-Saharan Africa. There are case studies on DFS deployments by banks, microfinance institutions, MNOs and payments service providers, focusing on what we see as the most prominent aspects of the emerging market for affordable, accessible and sustainable financial services on the continent today: strategy, technology, agents, merchants, market research, product development, marketing and customer acquisition, risk management, data analytics, value chains and interoperability. We also offer eleven research focuses, exploring in some depth some of our key research studies and learnings from the Partnership for Financial Inclusion, answering questions such as what makes an optimal agent, what characterizes DFS users in Africa, and what difference access to financial services make in peoples' lives. We have also asked some of our clients and partners to share their outlook of the future of DFS in the region, and surveyed the industry to find answers to some of the most pertinent questions in the market today.

All in all, this publication gives readers not just a summary of the achievements of the Partnership for Financial Inclusion, but a good sense of the deeper fabric of the DFS market in Sub-Saharan Africa today. One thing is sure, the future of the financial sector in the region is digital.



*Lewis Sikanyika, a Zона customer, in Lusaka, Zambia, on 9 January 2018. He was withdrawing money from his Sunga e-wallet to pay for a vehicle license registration.*

# From revolution to evolution: digital finance in Africa

By Susie Lonie

*DFS Specialist and IFC Consultant*

A decade after the launch of M-PESA, the use of DFS is an established part of the daily routines of millions of Africans, providing employment to hundreds of thousands of agents, an important contribution to the business of banks, MNOs and MFIs, as well as national economies. The remarkable growth of DFS in Sub-Saharan Africa has created an entirely new market for affordable, accessible and sustainable financial services. This has led to huge expansion in financial inclusion, helping to improve the livelihoods and lives of millions. DFS has also catalyzed the growth of completely new services that previously lacked a charging mechanism, not least for micro-entrepreneurs. Some trail-blazing organisations with cultures open to innovation have been fast to benefit from the opportunities DFS brings. Many others are only now beginning to explore its potential to provide services and products tailored specifically to low-income people. Across Africa, people live in a mainly cash economy, and the potential benefits that DFS can bring to people, business and government is prodigious. It is estimated that widespread use of digital finance has the potential to boost the annual GDP of emerging economies by US\$ 3.7 trillion by 2025, with a third coming from additional investment in the MSME<sup>1</sup> sector, and two-thirds from increased productivity of larger businesses and government.<sup>1</sup> The question is, how do we get there? To get an idea of where the future may take us, it is helpful to first look backwards at what has been achieved to date, and how it all happened.

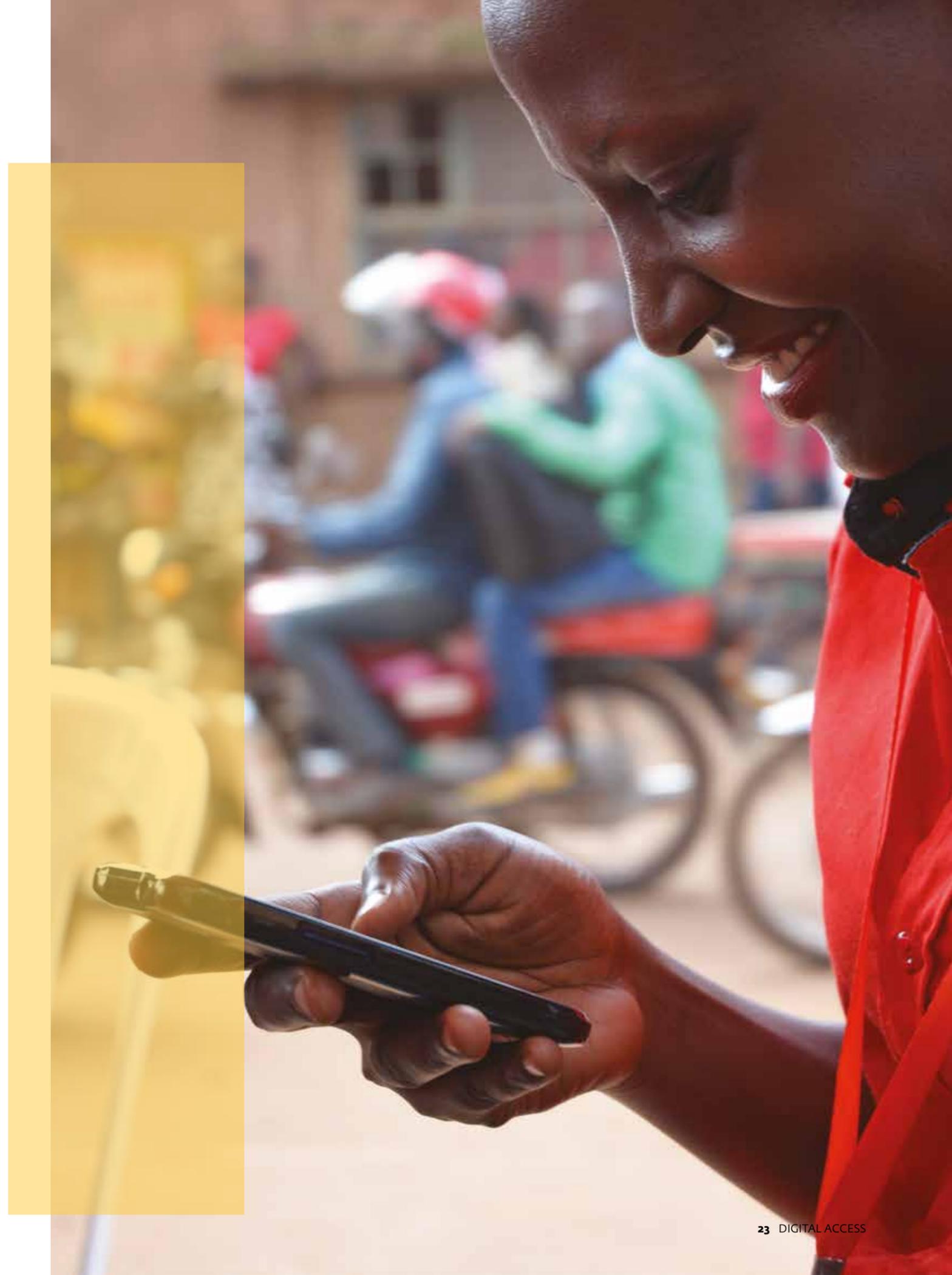
## The rise of DFS in Sub-Saharan Africa

Despite earlier attempts by several providers, the DFS revolution really started to gain traction with the launch of the M-PESA mobile money service in Kenya by Safaricom in 2007. At launch, M-PESA was a very simple service, offering person-to-person transfers, airtime top-up and cash-in and cash-out services via a

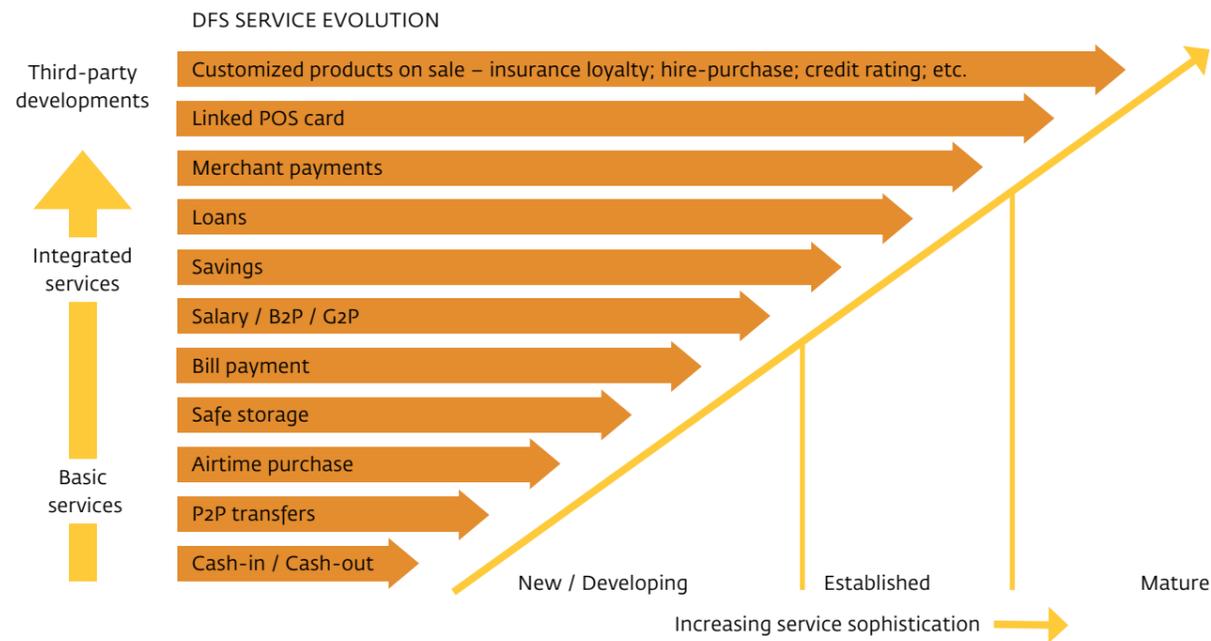
network of agents. The major innovation that it brought was to decouple the financial service from the accepted financial infrastructure. The business model was based on transaction fees and supporting the core MNO business, with low transaction charges (and revenue) per user. This model has been adopted by many new DFS providers from all sectors since then. The Kenyan banking sector was also innovating around this time. Capitalization allowed Equity Bank to develop innovative lower-cost products for consumers, MSMEs and the agriculture sector, and by 2011 it provided over a million loans worth US\$ 1.45 billion to them. By 2017 the Kenyan mobile money market had grown to 37 million registered accounts and KES 3.6 trillion (US\$ 36 billion) in transactions.<sup>2</sup> Regionally there were 276 services across 90 markets, with over 690 million registered customers making US\$ one million worth of transactions every day.<sup>3</sup> Sub-Saharan Africa continues to lead the world, with nearly half of all registrations and more DFS accounts than bank accounts.<sup>4</sup>

Progressive banks and MFIs soon began to understand the potential of DFS to improve their businesses, usually focusing on agent services to extend reach and mobile access to improve customer convenience. As competition increased for traditional high value customers, many began to consider reaching down the pyramid to higher value unbanked individuals and SMEs that might individually be less attractive, but cumulatively presented a sizable source of new deposits.

However, key to DFS evolution is partnership. Whilst many services started as closed-loop systems, even those provided by banks and MFIs soon needed to interconnect with other accounts in their own organisations and with other financial institutions to widen the offering. Interoperability is a precursor to most sophisticated services, and this is becoming increasingly common in all markets. It underpins the development of digital payments across value chains, and enables salaries and social payments to be paid digitally to recipients using a range of DFS. Increasingly, partnerships between banks and MNOs are arising, and interconnected services are needed to support the resulting services. Banks have financial expertise that can be coupled with the enormous data sets of MNOs to map customer behavior to create new types of financial services.



DFS service evolution as markets mature<sup>5</sup>



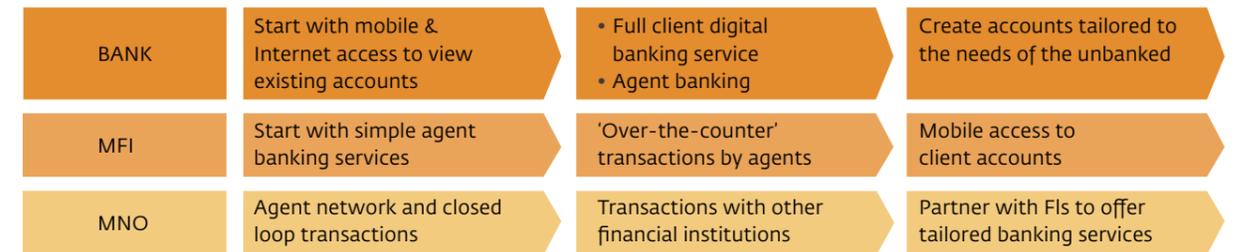
An excellent example of such a partnership is M-Shwari, the first DFS enabled micro-savings and loan service developed specifically for the unbanked, using telecoms and DFS data, from the Commercial Bank of Africa (CBA) and Safaricom. This complex service is fronted by a simple, easily understood customer proposition that has proved enormously successful: within four years M-Shwari had 14 million customers, was holding US\$ 81 million in deposits, and had disbursed nearly a billion US dollars in loans.<sup>6</sup> This initiative has transformed CBA, which was principally a commercial bank, into the largest retail bank in the country in terms of registered customer numbers. In 2014, CBA went on to partner with Vodacom in Tanzania to create a similar service, named M-Pawa, that by 2017 was issuing over 350,000 loans per month valued at over TZS 5 billion (US\$ 2.5 million).<sup>7</sup> Similar partnerships with MTN in Uganda and Rwanda, branded MoKash, have resulted in over 2.5 million registered customers in the first year.<sup>8</sup> It is reasonable to speculate that across Africa many similar partnerships between MNOs and financial institutions are being formed to roll out this obviously popular and potentially attractive new type of service.

Tanzania was the first market to offer market-led mobile money interoperability between DFS providers for

domestic P2P transactions. Fierce competition between DFS providers presented challenges in engendering the level of trust needed for such a partnership, and each was concerned that interoperability would reduce revenue. Establishing ‘scheme rules’ and revenue sharing models required careful negotiation. Far from reducing revenue, interoperability has increased the number of P2P transactions for all providers.<sup>9</sup> This can be seen as a proof of concept, demonstrating that competing commercial organisations can work together to develop the market without the need for a mandate from the central bank.

Many providers are taking partnership a stage further, adopting an ICT approach and opening APIs to the fintech community. An Application Programming Interface is a set of rules that define how two systems are allowed to talk to each other in a rigorously controlled manner, which enables third-party innovators to build new systems and products that integrate the provider’s proprietary information securely into their own services and applications. As well as allowing businesses direct access to digital payments, the M-PESA API enables startups to experiment with new business ideas that have inbuilt payment capability.<sup>10</sup>

Industry sectors generally follow different functional routes to digitization



### How customers use DFS

Similar DFS usage patterns can be seen across many markets, depending on maturity. The key competitor remains cash. For most MNO wallets ‘cash-in’ is the most common precursor to other transactions, and ‘cash-out’ the most likely result of receiving a remittance. The digital service most commonly provided by MFIs is savings accounts designed to increase deposits by encouraging clients to deposit their spare cash. Advanced service portfolios may be growing in the leading DFS markets, but for many the range of services on offer is still limited. Airtime top-up, where offered, is usually the highest volume transaction, but low in value (and revenue), because most purchases are sub-US\$ 1. For example, in 2016, aside from cash-in and cash-out, airtime purchases constituted over 60 percent of transaction volume worldwide, but less than 6 percent of value. By contrast, domestic P2P transfers accounted for one-fifth of transaction volume but over two-thirds of value.<sup>11</sup>

Whilst the commonly publicized P2P remittance use cases involve supporting family members, in practice the P2P service has a wide range of uses, including significant numbers of informal business transactions (B2B and P2B). Whilst ‘urban to rural’ certainly is an important corridor, there is little evidence that this is the key driver of P2P volume, and much anecdotal evidence of high transfer volumes between and within cities, as well as some activity from rural to urban areas.

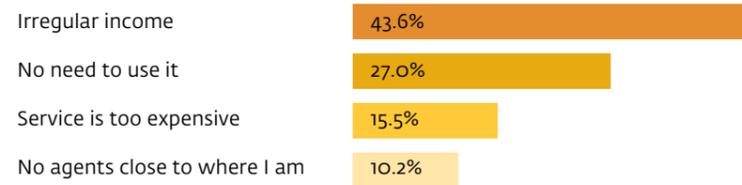
*The P2P wallet transfer is such a useful general purpose transaction that it is used for a huge variety of reasons; if a specific transaction is not available, customers simply use P2P instead.*

As new, relevant use cases and transaction types become available, customers embrace them. DFS enabled savings and loans demonstrate this point well, and it can also be seen in the evolution of MFI digital offerings. In an IFC four-year study of nine African MFIs deploying DFS and agent networks, most saw a large proportion of their business become digital, with high adoption by both new and existing clients. As their services matured, many successfully extended these digital offerings to include services such as bill payments and P2P transfers. Some of these MFIs are now planning to go completely digital.<sup>12</sup>

Consumers consistently express the benefits of DFS as a combination of fast, safe, easy-to-use, affordable and convenient. But despite these benefits, DFS remains a secondary option compared to cash. Across the world, only about one-third of mobile wallet accounts are active<sup>13</sup> at any given time.<sup>13</sup> Activity levels vary by market. For example, in Tanzania, one of the most successful DFS markets, 87 percent of DFS registered users were active in 2015 (the same study showed just 65 percent of bank accounts were active).<sup>14</sup> Côte d’Ivoire has a thriving, although smaller DFS market, where half of the registered DFS accounts were inactive in 2014. Research revealed that the most commonly cited reasons for inactivity in Côte d’Ivoire were irregular income, and a lack of perceived need for the service. Respondents were also concerned about the cost of transactions (DFS is markedly more expensive in West Africa than East) and insufficient agent outlets.<sup>15</sup> World Bank estimates suggest that, on average, 25 percent of bank accounts in East Africa were dormant in 2014, with that number rising to 37 percent in some markets.<sup>16</sup>

DFS registered but inactive customers' main reasons given for inactivity in Côte d'Ivoire

MAIN REASONS FOR INACTIVITY AMONG RESPONDENTS



Challenges to successful services

Operating a successful DFS is neither cheap nor easy, and certainly not a 'quick win'. Unfortunately, the mercurial growth in Kenya led many organisations to believe the opposite and enter the market without sufficient preparation and with unrealistic expectations about resources required and the likely returns. One of the biggest risks to any new service is the disillusionment of the senior management team if it fails to deliver as expected, and the performance gap can be very wide in the face of unreasonable KPIs. This results in pressure to reduce support for DFS and return to focusing on the core business. As the DFS market matures, the need to invest has become much better understood, but there are still many live services that suffer from under-resourcing and inappropriate technology as a direct result of early strategic mistakes. It is estimated that in the early years of DFS, of more than 200 services launched, only ten achieved anything close to success in the first five years, usually due to inadequate planning and resource.<sup>17</sup> Not all potential DFS providers are ready to go digital, but many feel pressured to do so by investors or competitor activity. There are also different levels of entry into DFS, and good advice for new entrants is to take time to get the strategy and plan right; start small with a limited service and/or geographical reach, and grow the DFS as the business gains the experience to cope with the new challenges and opportunities it brings.

*There is a largely untapped opportunity for organisations to treat high quality agents as a marketing asset as well as a sales channel.*

In the face of relentless change, regulators have an increasingly tough job. In Kenya, the regulator decided to take a 'wait and see' approach commensurate with the perceived risk, learning about the technology and its

implications, keeping a close watch on the market, then regulating when it decided that it had sufficient information and cause to act. This is one reason why Kenya has been Africa's leading DFS market, both in terms of size and innovation, for many years. By contrast, in those markets where the central banks decided to regulate first, typically imposing restrictive conditions, the result has often been limited services and low consumer uptake.

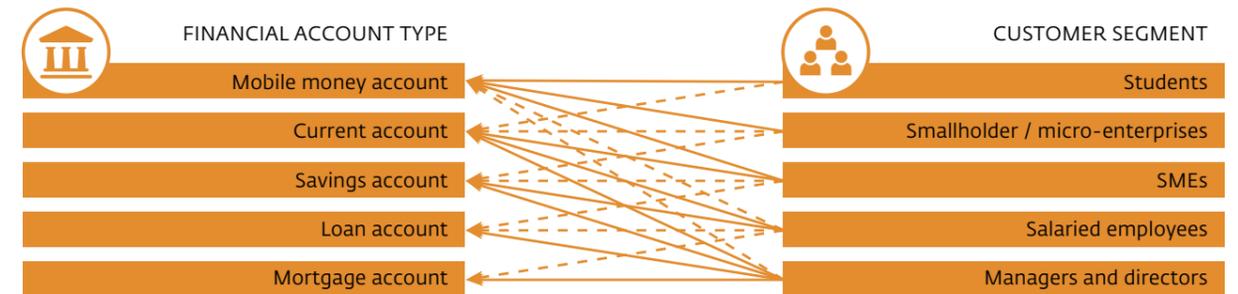
What is next for DFS in Africa?

The launch phase of this new industry can be considered complete with hundreds of established services, many of which are profitable. We are now moving into a new phase of development, with emerging technologies and wide-scale integration between DFS and other financial services providing a wealth of new opportunities. Increasingly, banks are reviewing how they can transform to become more agile and compete, actively targeting the unbanked.

DFS is often considered in some way 'separate' from conventional financial services, particularly given their unconventional origins and focus on the unbanked. Of late there has been increasing support for the idea that they will evolve to become part of the mainstream financial service portfolio. Effectively, DFS will become another tool in the box, to be used when it is the most appropriate means of performing a specific transaction. Making the choice to use DFS versus another type of account will depend on the circumstances of the customer, their whereabouts and what they want to do. DFS will remain the more likely solution for low paid, rural customers to receive salaries and pay bills than for the urban rich. But affluent city dwellers may still find mobile banking or a wallet the most convenient way to pay in the local market.

The figure on the following page shows a simplified example of how accounts may be matched to consumer segments. Taking this model as an ideal future of financial services, a number of developments can be suggested to support it. The first is convergence of point-of-sale devices for both

Potential mapping of financial account types to customer segments



merchants and agents. The largest number of transactions in any market happen at retail outlets, but in Africa, few retailers have a POS device. Conventional POS are good at performing a very narrow range of tasks, require manual upgrades, and are expensive to buy and to maintain. As data networks are now widely available and smart devices are falling in price, it is possible that these old-fashioned POS devices will be replaced by smartphones and tablets that can accommodate apps to process transactions from multiple account providers. Inexpensive printers and card readers can be connected as required, and many come with the capability for contactless transactions as standard, and software can be upgraded automatically 'over the air'. These are also ideal for customer registration, with the inbuilt capability to photograph people and identity documents and to create electronic forms. Such unified smart devices are desperately needed across Africa to bring down costs for all financial service providers, and to encourage the move from cash to digital transactions. The technology is available, but thus far there has not been a drive to make this change, which will be complex and involve cooperation between multiple parties.

For customers, too, the role of smartphones is going to grow and it is just a matter of time until a few 'killer applications' emerge from amongst the mass of enthusiastic fintech developments currently underway. The figures for smartphone penetration and anticipated growth in Africa are impressive, with the 226 million smartphones present in 2015 expected to rise to 720 million by 2020.<sup>18</sup> However, developers should be aware that this does not mean that over half the population of Africa will have a smartphone. Even the cheap devices are relatively expensive for many, so smartphone users tend to be more affluent. They upgrade regularly, and many smartphone users have more than one device. Because of this, smartphone penetration amongst the target unbanked DFS users is likely to be more limited. Nevertheless, penetration is growing and opportunities exist to improve the DFS interfaces and provide associated financial services by mobile Internet and user-friendly apps.

The enormous amount of data produced by DFS has started to be harnessed by micro-loan providers, but this is just the tip of the iceberg that is the opportunity presented by Big Data, both in new customer services and improving operational efficiency. As many DFS providers are under pressure to provide greater returns from their services, probably the most immediate need that Big Data can address is to identify efficiency improvements and cost savings. Smart use of this data can show detailed financial behaviour patterns, providing an unprecedented opportunity to better understand customers, to provide robust segmentation, and tailor marketing and product development. Big Data can also serve the SME community with improved DFS and related services. For example, DFS agents and merchants can be incentivized by business loans based on their DFS activity. As the DFS provider holds their accounts, the risk is low, and the perceived negatives such as tax liability and transaction fees can be overcome by access to loans. Another potential use is to provide inventory information and predictions, both for agent float and merchants' stock-holding.

Government can and should play a greater role in promoting DFS. In many Latin American markets, DFS has been led by banks with agent networks, and government payments have proven an effective way to generate mass adoption of services. In Mexico, Bansefi Development Bank makes regular digital social payments to 6.5 million people on the government's Prospera program, using retailers as part of the distribution network. The Brazilian Bolsa Familia program provides payments digitally to prepayment cards as well as bank accounts.<sup>19</sup> Few African governments have yet given practical support to DFS in the form of social payment distribution, despite their stated support for financial inclusion. Providing guaranteed regular transactions to millions of recipients would provide an enormous boost to the performance of both DFS providers and their agents.



### Not 'if' but 'when'

There is growing worldwide consumer demand for DFS, from on-line access to conventional banking services to prepaid cards and mobile wallets, and African consumers are no exception. Increasingly, they appreciate the benefits of convenience, speed, security and affordable pricing that DFS can bring. Some are skeptical due to perceptions of risk, lack of consumer protection or technological failure, but the stellar growth of DFS to date indicates that it is only a matter of time until they are also onboard.

It is estimated that the financial opportunity from unbanked and under-banked customers across the globe is US\$ 380 billion in annual revenues.<sup>20</sup> Growing incomes at the base of the pyramid represents a spending market of US\$ 3 trillion across the bottom 40 percent of the population in low- and middle-income economies.<sup>21</sup>

Many financial institutions are still struggling to accept DFS as part of their core businesses. For example, banks often consider clients with prepaid cards as not being 'real'

account holders, even though they issue these accounts and benefit from the deposits. Similarly, they see DFS as not being 'real' financial services; indeed, some actually call funds transfer from their accounts to mobile wallets 'bank to cash', even when they know that the money is being used to perform transactions that could have been processed by the bank. As they come to accept that products designed for the mass-market are as legitimate as conventional products, and can provide the bank with significant incremental revenue, DFS will enter a new phase of development. Where MNOs kick-started the revolution, it is now up to financial institutions, supported by forward-thinking regulators, to take up the challenge of developing new products, partnerships and business models that can take DFS and financial inclusion to the next level.

*Susie Lonie is a DFS Specialist working with IFC in Sub-Saharan Africa and a member of the founding team at M-PESA. In 2010 Susie was the co-winner of 'The Economist Innovation Award for Social and Economic Innovation' for her work on M-PESA.*

# Building a new market with knowledge

**By Soren Heitmann**

*IFC Operations Officer, Applied Research and Learning Lead, Partnership for Financial Inclusion*

The ambition of the Partnership for Financial Inclusion has always been bigger than our direct client engagements. Since the start of the initiative in 2012, the program team has launched over thirty original research studies seeking to better understand the emerging market for affordable, accessible and sustainable financial services for low-income people, small-scale entrepreneurs and rural populations. Our research efforts have focused on three core questions, each critical to supporting the emerging industry in its efforts to reach the previously unbanked.

- What are the drivers for scale and uptake of digital financial services?
- What value do digital financial services provide to financial services providers in terms of opportunities to grow operations, manage risks and deliver services?
- What is the impact on DFS users?

Our dedicated team for applied research and learning has leveraged a multitude of methods to explore these questions in a number of markets across Sub-Saharan Africa, stretching from Big Data analytics to ethnographic observations. While some of our research findings have been tailored to directly benefit our partners and aid their DFS deployments, we have made as much as possible public for the benefit of the industry as a whole and the expansion of financial inclusion. The research program seeks to close knowledge capacity gaps in the market. These gaps are targeted by the following research strategies: (1) Cross-cutting themes that are pertinent across all DFS markets and user segments, such as age or gender (2) Innovation and technology, working with clients to test new ideas and concepts and rigorously test DFS products and value

propositions, and (3) Depth of topical understanding by triangulating across a range of research methodologies and integrating with other DFS research partners in industry, academia and the World Bank Group.

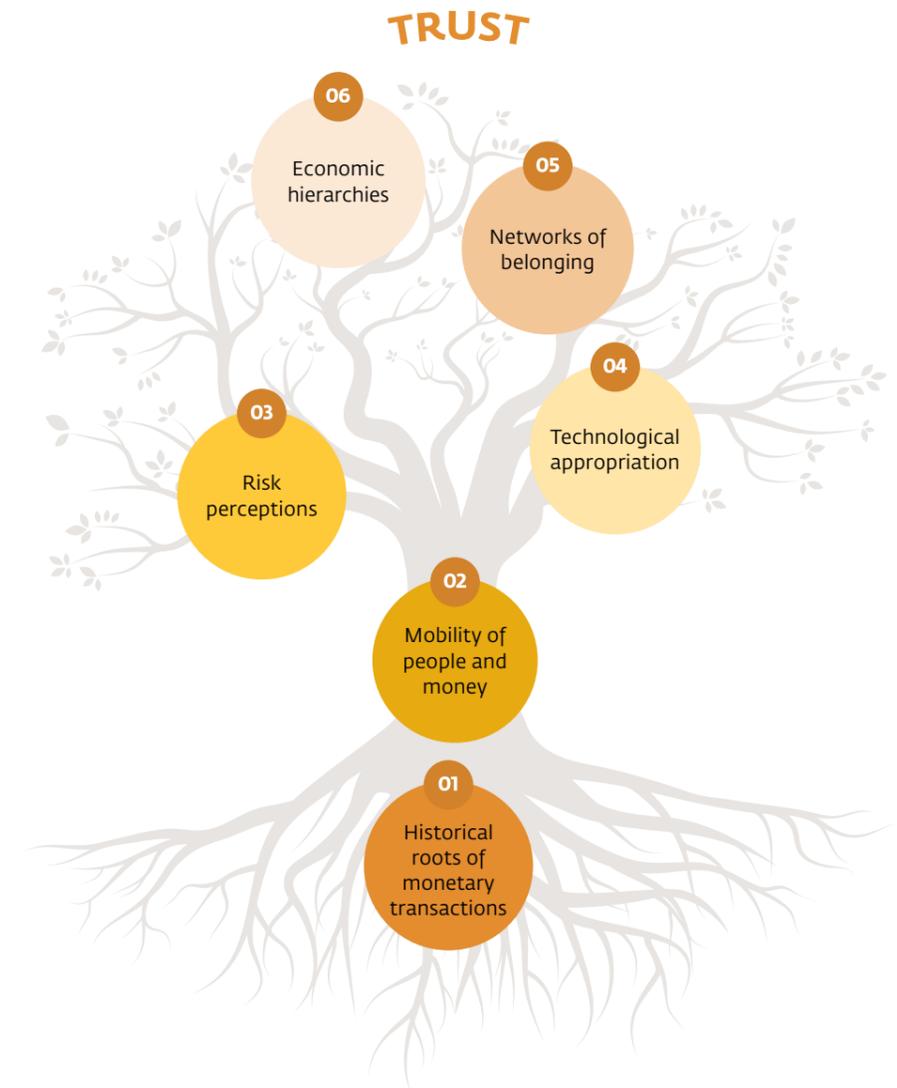
Our headline research finding is this: digital financial services improve peoples' lives. The general hypothesis behind the drive to expand global financial inclusion is that access to formal and sustainable financial services will be of great assistance to people who were previously deemed too high-risk and expensive for the traditional financial sector to serve. Is this true? A large portion of the world's adults have no account with a formal institution, and live in the informal (cash) economy. People with little money still need to make payments and perform other financial transactions, and they do so with cash. This excludes them from the many benefits that a formal account can offer, such as safeguarding their savings, establishing a credit rating, making payments without needing to physically transport cash, and access to funds for emergencies. The barriers to owning conventional bank accounts are well documented, including limited physical infrastructure, high charges, lack of KYC documentation and insufficient or irregular earnings. Therefore, many people have to rely on informal means of managing money that can be high risk and expensive. Further, the cash is held outside the financial system and cannot be used for investment.

We conducted a randomized control trial study in Senegal with a partner MFI, and discovered that customers who signed up for an account through agents became better customers and were more financially included than customers who used traditional bank branches. They made more transactions (withdrawals and deposits), saved up to 34 percent more, and had higher trust in the bank. Their personal attachment to the provider thus increased, even though customer interaction had been outsourced to agents. When users transact through an agent, it is personal, it is local, it is easy, and it is accessible. An Ethnographic study that the Partnership commissioned in four African markets – Cameroon, Democratic Republic of Congo, Senegal and Zambia – showed that the overarching factor that drives uptake of digital financial services on the continent is trust, which in itself is a factor of how well the



## Understanding the social and cultural context of DFS uptake

This graphic describes an ethnographic framework for how key socio-cultural factors may drive or inhibit use and trust towards digital financial services.



- 01 "I will never forget the disasters that hit the banking service in the past. So I don't have much trust in it and I use my account carefully." – Diam, Lubumbashi, DRC
- 02 "Faced with very hard living conditions, people are united with the people they work with and no matter how little they earn, they can always find a way of sending money to their family, even a little." – Focus Group participant, Dakar, Senegal
- 03 "These are like banks right in the street, at the bus station where sometimes we witness theft and all forms of pick-pocketing." – Bus driver, Kitwe, Zambia
- 04 "With the development of money transfers, whenever a family member asks for money, you need to make it clear - either you have money or you don't. You can no longer claim you can't get it to them." – Policeman, Louga, Senegal
- 05 "I belong to a savings group. This encourages me to interact, socialize, save money and maintain connection and ties with friends." – English Teacher, Bamenda, Cameroon
- 06 "Bank accounts are prestigious and it would be nice to have one. But we are just not the right class." – Mr Liseli, Kitwe, Zambia

technology works and how supportive policies of customer protection are perceived to be, as well as social and cultural notion, and the historical experiences of the financial sector.

What are the benefits to new users? There is emerging evidence that DFS can reduce poverty and food insecurity. In 2016, the Partnership conducted research with smallholder cocoa farmers in Côte d'Ivoire that were being paid for their produce using bank accounts linked to mobile wallets. The study shows that the habit of saving can help people smooth consumption and cope better with financial shocks. Farmers who saved regularly were better able to feed their families than those who did not save. This was the case irrespective of the farmers' annual income, demonstrating that those who gained a level of financial literacy and the habit of saving were better able to manage their money and improve living conditions, specifically during the so-called 'hunger months' just before the new harvest. The same study also revealed that, while many smallholder cocoa farmers felt 'socially excluded' or intimidated by traditional banks, they were generally accepting of agent banking and digital services. Similarly, in a seminal study in Kenya, researchers (Suri & Jack, 2016) found that M-PESA has reduced the poverty rate in the country by 2 percent since launch. It may not sound like a lot, but that equates to 194,000 households that have been brought above the poverty line by access to financial services, and the effect was particularly pronounced on women-headed households.

In Uganda, an ongoing Partnership research study is using a randomized control trial approach to attribute access to digital financial services to quantified improvement in peoples' livelihoods. Partial findings show that 70 percent of users are small-scale entrepreneurs, and that 40 percent of transactions they make are for their businesses. In the Democratic Republic of Congo, our agent performance study identified that women, on average, make better agents. This is particularly encouraging since the expansion of financial inclusion overall appears to be benefiting men to a greater extent than women.

Our studies show how impact and operational value go hand in hand. The research program has helped us better understand DFS customers, who they are and why they transact (or don't). Interestingly, our four-country ethnographic study looking at social, cultural and historical determinants of DFS adoption found that most such factors can work both as drivers and as barriers to the digital expansion of financial inclusion, depending on the specific country context. This is critical knowledge for the successful delivery of DFS that also helps advance and improve the quality of financial inclusion. Our innovative research methodologies, such as Big Data analytics and machine learning modeling, have helped us predict market growth opportunities for our partners. And our work on digital channel ecosystems have helped to fine-tune our understanding of business models and strategies to implement and grow digital channels efficiently. Many core lessons are presented in the chapters of this publication, with research focuses featuring a range of studies from our popular handbooks on technology, risk management and data analytics to more specific studies such as an examination of the case of customer inactivity in Côte d'Ivoire. Many studies substantiate business value for providers, quantified as numbers in active users or network growth; or show how innovative products and data analytics can proactively identify fraud, system gaming or operational inefficiencies with solutions that demonstrate tangible cost savings.

The DFS market in emerging markets is still nascent and fast evolving. Knowledge is critical to its advance and the concurrent expansion of financial inclusion. In Sub-Saharan Africa, we are witnessing an extraordinary shift towards more inclusive economic development, bringing millions of people into the formal and regulated financial sector and equipping them with tools to more easily manage their financial lives for their families, their businesses and the future. Knowledge, and knowledge sharing, is part of what makes this possible.

## Financial inclusion in Africa: what the numbers tell us

Sub-Saharan Africa exemplifies mobile money's potential to drive financial inclusion. Regionally, 43 percent of adults have an account, an increase from 34 percent in 2014. While the share of adults in Sub-Saharan Africa with a financial institution account barely budged, the share with a mobile money account almost doubled – to 21 percent. In every other region, mobile money penetration is lower than 10 percent.

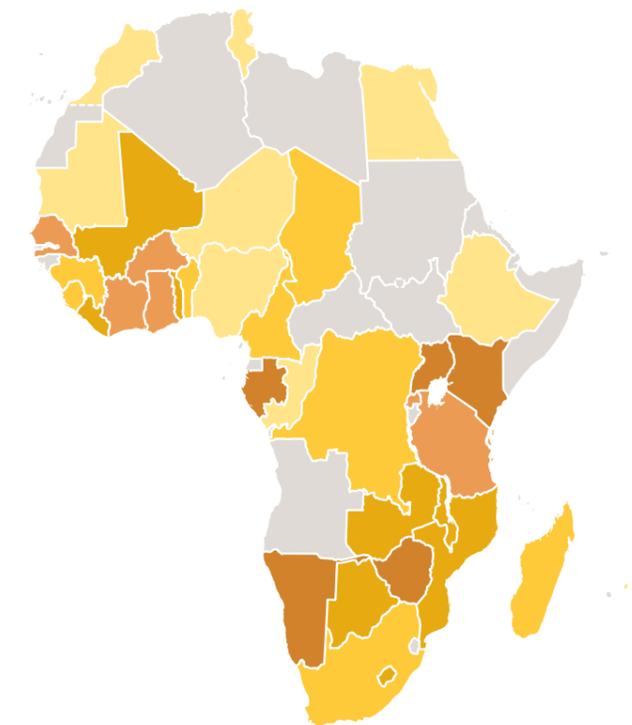
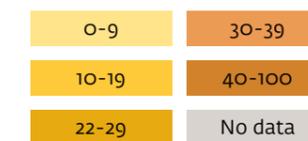
The last three years saw the spread of mobile money accounts from East Africa to West Africa and elsewhere. Sub-Saharan Africa is home to all eight economies where 20 percent or more of adults have a mobile money account only: Burkina Faso, Côte d'Ivoire, Gabon, Kenya, Senegal, Tanzania, Uganda, and Zimbabwe. Global Findex data suggests that in these economies, mobile money accounts might

be helping reduce gender and income gaps in account ownership. The use of a mobile phone to make a direct transaction from an account tends to be high in these economies as well. In Kenya, 88 percent of account owners (or 72 percent of adults) use a mobile phone or the Internet for a transaction from their account.

Opportunities abound to increase account ownership. Up to 95 million unbanked adults in the region receive cash payments for the sale of agricultural goods, while up to 65 million use semiformal savings.

By Asli Demirguc-Kunt, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. World Bank: Washington, DC, 2018.

Mobile money accounts, percentage of adults, in Sub-Saharan Africa 2017



## INDUSTRY OPINION

### What does the future of DFS in Africa look like?

We asked the industry. In the interviews on the next few pages you will find nuggets of wisdom from a range of our partners, representing a variety of financial services providers active in 11 African markets today. We also conducted a broader email survey with market actors and industry experts in January this year, on eleven key questions for the future. Over a hundred respondents from DFS providers, industry experts, investors, industry organizations, development finance institutions and academia, on the continent and beyond, provided their thoughts. They think, for example, that the provision of financial services in the future is more or less an even race between banks, MNOs and fintechs, and they think that blockchain technology will be primarily applied for value chain payments. In each of the following chapters, you will find a question and the answers, exploring industry opinion on the future of the DFS industry in the region.

#### Francis Matseketsa

Country Manager, Airtel Money, Uganda

*“I see a huge impact on financial inclusion.”*

#### How would you describe the typical customer of your DFS service?

It is an excited customer who is yearning to learn more about DFS, as they are currently picking learnings mostly from word of mouth. They want more awareness, more education, and more programs that teach them DFS and the benefits associated with it.

#### What impact do you see from DFS on financial inclusion and economic activity in your market?

I see a huge impact on financial inclusion, especially with more products that will uplift the poor and bottom of the pyramid customers – products like micro-loans and micro-savings and inward international remittances that will reach rural people from abroad.

#### As a DFS provider, what has been the most important learning in your company's journey so far?

The most important learning in our DFS journey so far, is the need to have total support from top management in putting in place a dedicated team to drive the DFS agenda, as opposed to using existing GSM resources to run the DFS business.

#### What is the key to success in rolling out a DFS service, in your opinion?

Key to success is to have a clear DFS strategy supported by the requisite skills to implement the strategy.

#### What are the biggest obstacles to DFS industry growth in your market?

The biggest hurdle is lack of clarity in regulations governing DFS, which cause continuous or sudden changes in policy and thus inhibit growth in DFS.

#### Where do you think the DFS industry will be in your market in five years' time?

An almost complete ecosystem will be in place, touching most sectors of the economy, to the remotest part of the country.

#### Mikhail Velichko

Chief Executive Officer, AccessBanque Madagascar, Madagascar

*“It is not enough to have a technical solution.”*

#### What is the key to success in rolling out a DFS service, in your opinion?

Communication with clients. When you are operating on the ground, you have to speak to your clients. You have to explain to them the benefits of financial services, and help create a habit of using them. This takes time and effort, and requires persistence.

#### As a DFS provider, what has been the most important learning in your company's journey so far?

The biggest learning is that it is not enough to have a technical solution. The level of financial literacy is low in Sub-Saharan Africa, and in Madagascar financial education hardly existed previously. We are launching a series of YouTube videos to explain in simple and entertaining ways how a person can benefit from having a relationship with a bank.

#### What are the biggest obstacles to expanding DFS in your market?

Infrastructure development is a big challenge, even roads. With digital financial services you still end up with cash, and delivering cash to an agent to help them balance their floats can be difficult.

#### Where do you think the DFS industry will be in your market in five years' time?

Madagascar has one of the lowest levels of financial inclusion in the world. The traditions of people living here are important, and they are used to doing things a certain way. In the future there will be a move to Internet channels though. Madagascar has a high usage of Facebook, and we are doing promotions and communicating with clients through Facebook. We have about 150 messages come in through Facebook every day, compared to 15-20 calls to our call center.

#### What impact do you see from DFS on financial inclusion and economic activity in your market?

The potential is huge, but so far activity and impact has been limited. There are many banks and microfinance institutions in Madagascar, all going after the same clients. To reach wider, for example all the street traders who have traditionally been excluded from banking, you have to first invest in delivering knowledge to them.

#### Julien Mahe

Chief Executive Officer, Advans Cameroun, Cameroon

*“Clients move fast to get the best service that fits their expectations.”*

#### How would you describe the typical customer of your services?

Advans serve micro entrepreneurs, small enterprises and farmers. Progressively, more and more of our clients are adopting DFS, and the development of an agent network has extended our outreach. We now also want to target salaried workers in rural areas working for agricultural companies or on plantations. They face a big problem accessing finance.

#### What is the key to success in rolling out a DFS service, in your opinion?

The two main success factors are client satisfaction and staff buy-in. Clients must trust third-party agents and feel comfortable to use the service. Strong internal and external communications are necessary in the Cameroonian context, to build awareness and confidence in digital services. Pricing is important too, especially when you are among the first movers on a new service.

#### What are the biggest obstacles preventing DFS from developing to full potential in your market?

Current regulation on alternative channels is not very precise, which means that every innovative channel that is proposed for the first time can be interpreted differently by regulatory authorities, which impacts the authorization process. The quality of infrastructure is also an obstacle. We are still facing issues related to the quality of mobile connections and telecom infrastructure.

#### Where do you think the DFS industry in your market will be in five years' time?

Most people who lack access to financial services are in rural areas, and as infrastructure and connections get better, more and more institutions will progressively offer DFS. The development of DFS through mobile money, e-banking and other digital solutions will provide greater access to clients and lower the cost of operations for both banks and microfinance institutions. Financial institutions are not just competing with each other, but also with MNOs and fintech companies. Clients move fast to get the best service that fits their expectations.

#### What impact do you see from DFS on financial inclusion and economic activity in your market?

DFS can increase prosperity and make people more able to have bank accounts to secure their savings. DFS also makes it easier to access loans, as it is possible to rely on Big Data for loan appraisals and disbursements, which really impacts the financial sector and forces financial institutions to review their business models.

**Mamadou Cissé**

Chief Executive Officer, Baobab  
(formerly Microcred), Senegal

*“Salaried customers are new for us.”*

**What is the key to successfully rolling out a DFS service, in your opinion?**

You need good knowledge of regulation. In markets where DFS is new, you may need to take the initial steps in regulatory evolution. We have worked closely with the regulator to understand the lack of regulation and to improve regulation. As a microfinance institution, it has been particularly important to show how we would mitigate risk, so that the regulator could allow us to move ahead with agent banking.

**What are the biggest obstacles to deploying DFS in your market?**

You need good IT infrastructure, and this can be complicated for a microfinance institution. Especially when the business case has not been proven yet, and you're operating your traditional business concurrently. You need to invest a lot.

**As a DFS provider, what has been the most important learning in your company's journey so far?**

Change management is critical. Your management needs to provide thought leadership for the business to adopt change, and everyone should have a good understanding of the project and how to present it to customers. It is a bit challenging to get everyone in an organization onboard and to switch to a mass market model when the traditional credit business is doing well. Staff will have natural concerns about objectives, productivity, bonuses, career development and similar. You need to involve them to support the change.

**How would you describe the typical customer of your services?**

More than 90 percent of our clients are entrepreneurs who have their own businesses, and the others are salaried workers and some farmers. We started reaching out to farmers about a year and a half ago, and salaried customers are new for us.

**Where do you think the DFS industry will be in your market in five years' time?**

There will be more financially included people, and lots of DFS actors trying to be aggregators. There will be more development of second-generation products, credit based on data-driven credit scoring in particular. We are afraid the MNOs will take a lead on providing nano-credit, but the advantage is for the mass market as a whole.

**Frank B. Adu Jr**

Chief Executive Officer, CalBank, Ghana

*“DFS will serve as an avenue to improve financial literacy.”*

**What is the key to success in rolling out a DFS service, in your opinion?**

Selecting the right technology platform is a key success factor for DFS, because it is the foundation of the entire service and will assist in providing the right product to customers. A reliable platform will ensure effective and timely transaction processing to boost customer confidence and enhance customer experience.

**How would you describe the typical customer of your DFS service?**

A typical DFS customer cuts across the different customer segments, i.e. individual, SME and corporates. There are the ones who are more technologically savvy and the ones who are not, however their expectation is to have access to financial services as and when they require without fail or service interruptions and to pay no or low commissions for transactions performed.

**What impact do you see from DFS on financial inclusion and economic activity in your market?**

The emergence of mobile-based savings and credit products for the unbanked and the underbanked is going to strengthen the financial inclusiveness of the target market, and create more convenience to the customer who is already enjoying banking services, in the sense that digital transactions, such as person-to-person transfers and bill payments, save customers time and resources. DFS is going to impact positively on the economic growth and stability of the Ghanaian market, and also serve as an avenue to improve financial literacy, exposing customers to options available in the financial services space and their rights as consumers of DFS.

**Where do you think the DFS industry will be in your market in five years' time?**

DFS will become an acceptable route to grow the financial sector, and will bring players in the insurance, investment and other sectors of the economy into the space to offer one-stop financial and non-financial services to customers. The preferred channel for offering DFS will be mobile devices due to the high and continuous adoption of mobile phones, and the fact that it is a reliable and great way to reach different geographic sectors of the market.

Daniel, a MoMo Pay activator, in Abidjan, Côte d'Ivoire, on 7 December 2017.



**Mamie Kalonda**

Chief Executive Officer, FINCA DRC,  
Democratic Republic of Congo

*“It’s important to reach the rural areas, because that’s where people are poor.”*

**What impact do you see from DFS on financial inclusion in your market?**

Financial inclusion was below 5 percent in the DRC, but has increased to over 10 percent because of the growth in mobile money. Our typical customers are low-income micro-entrepreneurs who serve the poor. They don’t have a large revenue, and the aim for us is to help improve their standard of living. Our clients can open an account even if they don’t have Congolese francs or dollars in cash, and they can deposit as little as 500 franc per day (less than 50 US cents) to build funds. There are no charges on deposits, very affordable maintenance fees on the accounts, and one free withdrawal per month. FINCA loans can be as small as \$50, and we are thinking about introducing digital loans of \$5-10 because there is demand. Unemployment is 95 percent in the DRC, and even for salaried workers wages are very low and payment often delayed. Everyone is trying to do their own business to get by.

**What are the biggest obstacles to the growth of DFS in your market?**

The poor infrastructure, especially in rural areas. It’s important to reach beyond the urban centers to the rural areas too, because that’s where poor people live. But it is really difficult because of issues with network, connectivity and inaccessible roads. We have clients who have to climb on top of chairs or up a hill to get a connection to be able to use our services, so it is really challenging.

**As a DFS provider, what has been the most important learning in your company’s journey so far?**

Our agent network has grown very fast, to 1,300 agents. Instead of just looking for agents anywhere, it pays to get a good understanding of who makes a good agent. Being able to target agents with good potential saves cost, allows you to move forward at faster speed, and leads to sustainable growth.

**Where do you think the DFS industry will be in your market in five years’ time?**

In the DRC it will grow faster than before. Almost all banks are going mobile. When FINCA DRC rolled out its agent model there were no regulations in place, but the central bank has now used the FINCA experience to draft laws on agent banking. An agent can work with any provider, and other market actors are contacting FINCA agents to work with them.

**Juan Seco**

Chief Operating Officer, JumiaPay, Kenya

*“There are huge opportunities out there, but they require departing from traditional ways.”*

**As a DFS provider, what has been the most important learning in your company’s journey so far?**

There is a massive gap in services for SMEs and micro-entrepreneurs who have shown the necessary commitment to grow their own business and the discipline to do so healthily. Many of them have no financing options to go to – either because the process is too long and full of requirements, or too expensive, or their business is seen as too small, even if the risk is low.

**What is the key to success in rolling out a DFS service, in your opinion?**

For most smaller entrepreneurs, time spent on a loan application is a massive opportunity cost. It is time away from running their business and earning income. The process and approval timelines therefore need to be reduced to have a product that really meets the need of potential borrowers.

**What are the biggest obstacles to DFS industry growth in your market?**

The agility and ability of traditional lenders to adapt to new paradigms and ways of putting their capital to good use. There are huge opportunities out there, but they require departing from traditional ways of looking at credit scoring and loan risk profiles.

**Where do you think the DFS industry will be in your market in five years’ time?**

I think we will see more and more lenders jumping into the opportunity that digital platforms offer to generate new loan portfolios that could have been perceived as extremely risky in the past, but for which they now have ways of getting the needed data to make a decision.

**What impact do you see from DFS on financial inclusion and economic activity in your market?**

I think it will be huge and will create opportunities to successfully onboard a full segment of the economy into the financial services sphere. Financial inclusion is not only about access and financial literacy, it’s also offering a product that caters to the day-to-day needs of the users and I believe DFS have the ability to do just that for a large part of the economy that remains untapped.

**Godwin Ehigiamusoe**

Chief Executive Officer, LAPO Microfinance Bank,  
Nigeria

*“The prospects for DFS in Nigeria are very bright.”*

**What impact do you see from DFS on financial inclusion and economic activity in your market?**

DFS will certainly extend the frontiers of finance in Nigeria. Currently, there is a huge gap between the concentration of financial institutions and services in urban centers and the acute deprivation of financial services in the rural economy. This gap is expected to be significantly bridged by DFS. Enhanced financial intermediation, propelled by DFS, will make a significant impact on agriculture and the many Nigerians that are engaged in agriculture.

**How would you describe the typical customer of your services?**

About 90 percent of our clients are women. It is widely known that women are generally excluded from a range of financial services. Our customers generally have a low level of education, and are mainly owners of small-scale and micro businesses. They are aged between 18 and 55, and most have about 4-5 children per family.

**Where do you think the DFS industry will be in your market in five years’ time?**

The prospects for DFS in Nigeria are very bright. The initial apathy will be overcome with greater awareness and demonstrated value for stakeholders, especially for service providers. There is growing commitment among financial institutions, particularly microfinance institutions, to the digitization of products and offerings. In addition, there are a growing number of fintechs operating locally. There are a number of widespread financial practices among people that can be digitized. These factors, in the near future, will combine to give DFS a quantum leap in the Nigerian financial sector. Very soon, conventional client recruitment, loans origination, disbursement, collection, as well as deposit mobilization channels and processes will be replaced. Any financial institution that desires to reach a large number of clients in an efficient manner cannot afford to ignore the emerging DFS revolution.

**What are the biggest obstacles to DFS developing in your market?**

A major obstacle to DFS in our environment is attitude. People still associate financial transactions with conventional banking premises. It takes time and effort to convince people to see a next-door convenience shop as a place for credible financial transactions.

**Brett Magrath**

Co-founder and Chief Customer Officer, Zoono,  
Zambia, Malawi and Mozambique

*“For providers, it may seem like a small thing to get a person to trust you with ten dollars.”*

**As a DFS provider, what has been the most important learning in your company’s journey so far?**

To listen to customers, understand their needs and design around their needs, rather than pushing a technology or solution. We’ve utilized a Human Centered Design process, and spent a lot of time in the prototyping phase before development. The prototyping requires a back-and-forth engagement with customers, and it is a process that involves constant iteration to understand high-level needs, user experience, and what’s most intuitive to customers.

**How would you describe the typical user of your services?**

In Zambia, we are driven by six different consumers: higher end, tech savvy students, business owners and achievers (employed individuals), who use more smartphones and have higher tech savviness. Then traders and seasonal labor, who prefer to transact with an agent rather than on their phone device. You find that the higher income individuals are supporting the lower income levels. For example, you have students who are dependent on people supporting them, then they become achievers and support dependents.

**What impact do you see from DFS on financial inclusion and economic activity in your markets?**

Cash is expensive, it is limiting, and difficult to transact. DFS is more effective and efficient, and it gives you the ability to build transaction histories and a credit score to access credit and savings that you don’t have in a cash economy. What creates challenges in the industry is a lack of understanding of users and lack of financial education, but when the industry takes it upon itself to make sure people are educated about the services we will see more DFS services and economic growth.

**What is the key to success in rolling out a DFS service, in your opinion?**

The challenge is not digital, but one of trust and quality of experience. People get very excited and hyped by the promise of scale, and lose touch with the reality of the users on the ground. For providers, it may seem like a small thing to get a person to trust you with ten dollars, but for that individual it’s a huge amount of money. The key to success is to offer DFS in an empathetic way and to understand the development needs of the community to drive adoption.



Susan Mwango, a ZoonA teller, in the booth she operates in Lusaka, Zambia, on 9 January 2018.

**Alain Claude Nono**

General Manager Mobile Financial Services,  
MTN Cameroon, Cameroon

*“We need to invest for growth.”*

**Where do you think the DFS industry will be in your market in five years' time?**

If we compare today versus three years back, there's already a significant shift in the usage of some services as more and more subscribers send money or recharge airtime using their mobile wallet. In the future, this trend will grow with a more diverse set of payments done using mobile money wallets.

**How would you describe the typical customer of your DFS service?**

An average income subscriber without a bank account, using his wallet to recharge airtime, send money, pay his electricity bill or a subscription to a TV program.

**What is the key to success in rolling out a DFS service, in your opinion?**

Subscriber education during the onboarding process is very important. Starting with basic services and gradually introducing more advanced services. This will ensure that a good proportion of registered customers remain active.

**What are the biggest obstacles to DFS industry growth in your market?**

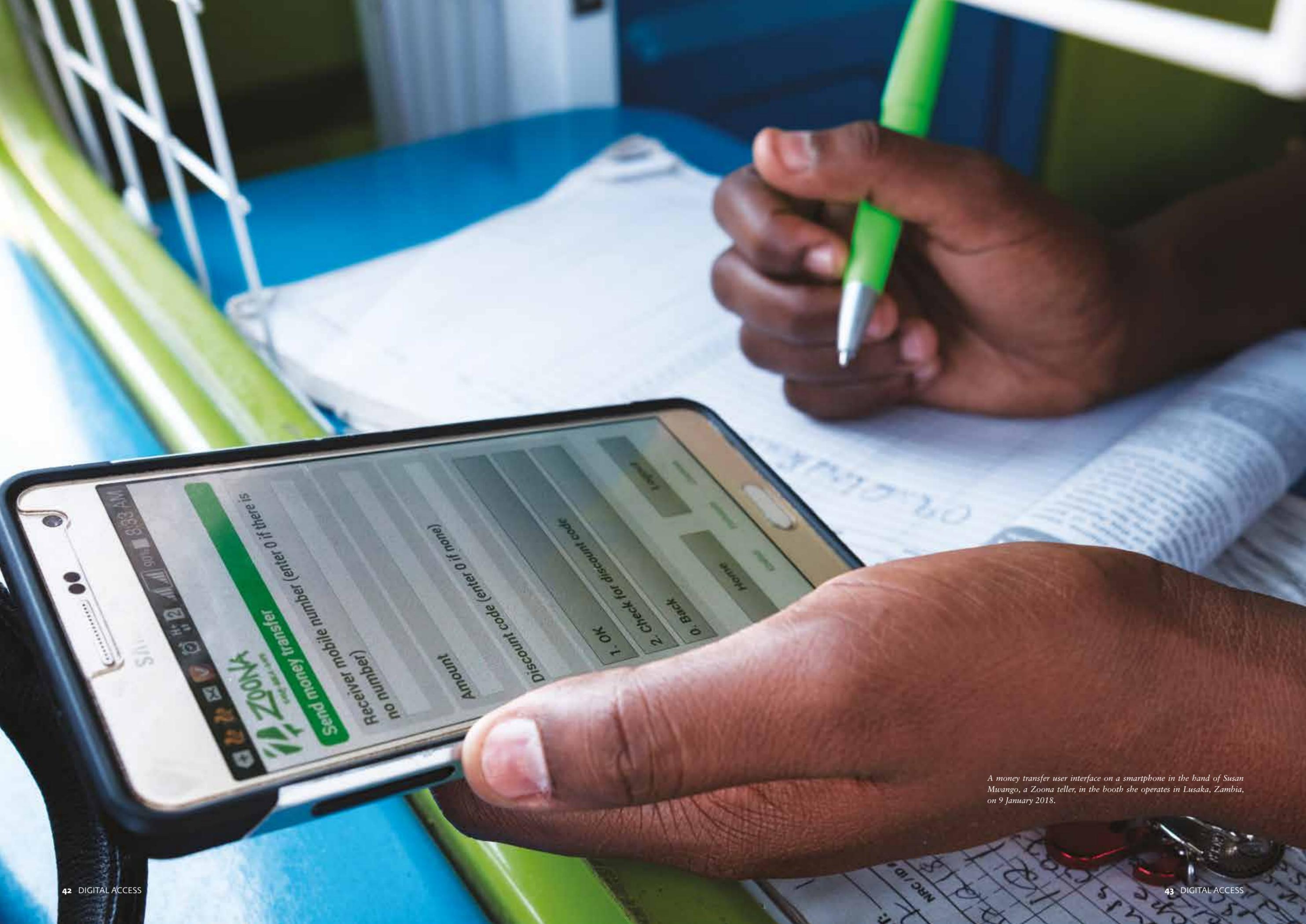
In a few instances, the services proposed are ahead of the provisions of the regulation. It is therefore important to have a framework where regulatory authorities, partner banks and technical partners work hand in hand to address concerns around themes like anti-money laundering, while promoting financial inclusion. Also, traditional banks sometimes have seen more threats with mobile money than opportunities. The positive outcome of the learning curve over the recent years is that most banks are now engaging in digital banking initiatives in partnership with mobile operators, and we can see a positive momentum for a complementary approach between banks and mobile operators.

**What impact do you see from DFS on financial inclusion and economic activity in your market?**

There's definitely a positive impact on financial inclusion as a significant amount of money is now injected in the formal banking universe through mobile wallets. Furthermore, all these subscribers who were not eligible for a banking account can now be scored against their financial behavior and have access to more services.

**As a DFS provider, what has been the most important learning in your company's journey so far?**

We need to invest for growth. Digital financial services are a strong tool for subscriber retention and an alternative revenue stream to compensate a declining trend on telco core services.



*A money transfer user interface on a smartphone in the hand of Susan Mwangi, a Zooma teller, in the booth she operates in Lusaka, Zambia, on 9 January 2018.*

# 1 STRATEGY

## Strategy is the first crucial step on a DFS journey

*For established banks that want to expand into the mass market, digital financial services are an obvious choice. What the DFS strategy and implementation should look like is less given. There are many options in terms of business models, technology and approaches, and it is easy to get lost in a rapidly evolving market environment.*

Digital financial services have fundamentally changed the financial sector in Sub-Saharan Africa. The number and variety of financial service providers have increased as a new market for affordable and accessible services and products has emerged. Long gone are the days when banks were exclusive buildings on the main streets of larger cities only, catering mainly to corporate and wealthy clients. Low-income people, small-scale entrepreneurs and rural populations that were previously considered too risky and too expensive to bank, are now the growth market.

CalBank is an indigenous financial services provider in Ghana, providing a broad range of banking and financial solutions to large corporations, small and medium-sized enterprises, public sector institutions and retail customers, through a network of 28 branches, over one hundred ATMs across the country, and more than 130 POS terminals that facilitate card payments at merchant locations. As part of the bank's strategy to promote financial inclusion, the bank has introduced a mobile banking (USSD) service that allows customers to link a mobile money wallet to an account, thereby bringing mobile money wallet holders into the banking system. Mobile banking also offers customers the convenience of accessing their account information and transacting on mobile devices. The bank has further

introduced an app through which customers are able to access account information and make payments. CalBank aspires to be a financial services institution of preference through delivery of quality service, using innovative technology and skilled personnel to achieve sustainable growth and enhanced stakeholder value.

In 2016, it entered into partnership with IFC to launch a digital financial services strategy to expand its retail services and rapidly increase its retail base. The bank already had quite advanced ideas of how to reach out to the mass market by deploying a Mobile Virtual Network Operator, an approach that is relatively untested and fairly expensive. During an introductory workshop held by IFC's DFS team in Sub-Saharan Africa to share knowledge and experience, discussions focused on the goal of mobilizing sustainable retail deposits and how to deliver a mass market proposition to the market. Several ways were explored, including the MVNO approach. While the MVNO strategy would be pursued for the longer term, the IFC team proposed that the bank opt for a tried and tested agent banking approach as a first step to going mass market.

CalBank's primary goal to employ DFS was to attract new customers and new depositors. After reviewing the MVNO vs agent network approach, it was proposed that the agent banking approach would be more strategic, as it allows CalBank to target new customers directly with financial service products, without having to first acquire them as

GSM customers. Also, the level of effort to set up an agent network, as opposed to MVNO, was significantly lower in terms of cost, regulatory approvals, and infrastructure development time, and wouldn't require negotiating hard-to-reach service agreements with an MNO. The agent banking network will create the foundation on which the MVNO objective will be achieved in the medium to long term.

The cost of investment for the agent banking channel was approximately 10 percent of the MVNO, and the time to market was less than half. The proposal immediately resonated with the CalBank team, and the bank is now currently preparing to launch its agent network solution in 2018. It's expected to reach approximately one million customers in five years, including 500,000 new users that previously had no access to banking services.

IFC's partnership with CalBank offers holistic support throughout the implementation of the DFS strategy, from primary market research and the design of the agent model to customer acquisition activities and risk management. The project exemplifies the comprehensive approach required to launch a DFS implementation from zero. Formulating the strategy is the first and crucial step that includes developing the business case based on the long-term goals of the institution, present capabilities and capacity, current market position, and financial assumptions.

Implementation requires a comprehensive effort. Market research helps establish the opportunities in the market to acquire new customers and where to locate agents. An analysis of existing customers can be useful to discern trends that can be leveraged to enhance the delivery of the new channel and products over the channel. An agent delivery model needs to be designed that benefits all parties in the value chain, plus the necessary support structures within the bank to manage the network. This often requires substantial staff training. In terms of IT infrastructure, the agent model will need to be supported by a contact center, an agent management system and CRM. The launch of the agent banking channel also introduces new risks and amplifies other existing risks, often making it necessary to review and strengthen risk management practices. Once the channel is ready to launch, customer acquisition will require education and registration campaigns via above- and below-the-line channels to bring new customers on board and encourage existing bank clients to adopt DFS.

DFS is relatively new in most markets in Sub-Saharan Africa, and for a lot of institutions a DFS implementation requires new knowledge. It is important to fully examine the available options upfront, and devise a strategy that resonates best with the institution and the goals it has for launching DFS. Unless this is fully established upfront, it is highly likely that something will go wrong along the way.

## How to date successfully in the DFS era

**By Joseck Luminzu Mudiri**

*IFC Senior Operations Officer, Johannesburg, South Africa*

A key strategic consideration to successfully design and deploy digital financial services is to identify the right partner or partners. DFS implementations are structurally complex, typically requiring expertise in banking, telecommunications, technology, marketing and distribution. Rarely will one company have the core competence to perform all of these functions efficiently.

Banks and MNOs commonly partner to create digital channels leveraging the bank's regulatory status as a financial services provider and the MNO's customer base and distribution network. There are product-specific partnerships, such as the successful digital micro-loan service, M-Shwari, pioneered by Safaricom and Commercial Bank of Africa in Kenya. Many DFS providers outsource their network management to an aggregator in distribution partnerships. Increasingly, there's opportunity for collaborations between DFS providers and fintechs to pursue innovative solutions catering to an ever-more sophisticated customer demand. Regardless of whether partnerships are driven by economic or regulatory necessity, they have become an important feature of DFS delivery in many markets.

How does a provider identify its dream partner, and how do partners make their relationships last? Partnerships should be designed by aligning the strategic goals of the partners, and by leveraging the key competencies of each partner. Partnerships are delicate, and strategic buy-in is critical to success. They should also be iterative in nature, allowing for learning as they mature. Partnerships will surely fail when there's strategic misalignment, however strong the partners are in themselves. Customer ownership is a particular bone of contention. Control, skills, structure, organizational culture and technological compatibility are all important factors.

Agile and competitive DFS providers offer better solutions to users, more efficiently. Forward-looking service providers realize that they are part of a wider and rapidly evolving ecosystem, and use their strengths to unlock the benefits of the entire system or risk being left behind.



## MARKET OVERVIEW

### Ghana: a West African rising star

Ghana has a fast-growing economy that has experienced sustained GDP growth in recent years. Over half the population of 27.5 million now lives in urban areas, and the service sector provides over 40 percent of all jobs. However, the largest employer is still agricultural (45 percent), mainly in the form of smallholder farming. With economic growth, there has been significant progress in poverty reduction and just 13.6 percent of the population now lives below the poverty line, although this figure is higher in rural areas.

The Ghanaian economy has suffered from falling commodity prices, soaring inflation and the currency losing value over the last few years. As a result, the central bank increased its minimum capital requirements for banks. The consumer credit market in Ghana is tight and expensive, with most banks preferring to keep deposits in treasury bills that are at a current one-year interest rate of 15 percent.

Ghana's financial inclusion rate is relatively high, with 58 percent of adults having an account of some kind in 2017.<sup>1</sup> By December 2017 there were 11.4 million accounts with licensed financial institutions, and 24 million mobile money accounts.<sup>2</sup> Some banks have started to engage actively in providing DFS, such as Fidelity Bank's Smart account; a card-based account with abridged KYC requirements that can be used with digital POS devices for a range of transactions. However, most DFS activity is via MNO wallets. Over 2016 the amount held in mobile money accounts rose by 85 percent, and active users grew by 71 percent to 8.3 million.

About two-thirds of the population are mobile phone subscribers, meaning Ghana substantially outperforms most of Sub-Saharan Africa. Internet usage via smartphones and feature phones is also high at 45 percent, supported by widespread 3G coverage. There are nine registered MNOs with the top four (MTN, Vodafone, Tigo and Airtel) being responsible for over 97 percent of all mobile

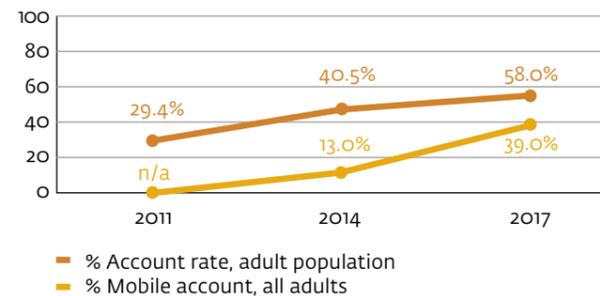
communications and also providing the four mobile wallets on offer. MTN dominates mobile wallet usage with over 90 percent market share.<sup>3</sup> In early 2018, Tigo and Airtel merged, and the impact this will have upon the companies' respective DFS offerings is yet to be seen.

DFS support a wide range of transactions including domestic and international remittances, utility payments, bulk payments (such as salary payroll and social payments) and transfers between wallets and conventional bank accounts. In 2016, Ecobank launched the TBILL4ALL service, the first service of its kind allowing the purchase of treasury bills using mobile money. More recently, interest-bearing savings have been made available, such as the 'MTN Y'ello Save' service launched in 2017 in partnership with Fidelity Bank. In 2016 the central bank approved interest payments on funds held in mobile wallets, and in 2017 the MNOs paid their customers approximately US\$ 16 million in interest.<sup>4</sup> Micro-lending and micro-insurance services are also available, although they have yet to achieve scale.

The Bank of Ghana first issued DFS guidelines in 2008, intended to promote interoperability and open access, and included the requirement for multiple banks to hold the MNO e-money float. However, this is now considered to have slowed early DFS growth, due to the unintended consequences of dilution of the potential benefit to banks creating a reluctance to invest, plus the difficulty in getting agreement between multiple partners.<sup>5</sup> New e-Money Issuer (EMI) Guidelines were issued in 2015 requiring each MNO to set up a separate business for its DFS, and to obtain an EMI license, bringing mobile money directly under the supervision of the Central Bank.<sup>6</sup> A new switch is being developed by the Ghana Interbank Payments and Settlement System (GhIPSS) to provide interoperability between mobile wallets. Expected to be ready in early 2018, it will also be able to route transactions between wallets and bank accounts. The scheme rules and pricing structure are not yet known. A second phase of interoperability is planned, linking this platform and the existing e-zwitch biometric card and POS system.<sup>7</sup>

The opportunity that DFS offers to increase efficiency, transparency and security of these transactions is significant. A study of DFS economic indicators for the central bank payment systems department concluded:<sup>3</sup> "Development of the mobile money sub-sector encourages financial inclusion and deepens the payment systems. Mobile money sub-sector is therefore one of the key drivers of the payment systems in Ghana."

Overall financial inclusion rate vs mobile money account rate



World Bank, Findex

Any account ownership, adult population, 2017	58%
Any account ownership, women, 2017	54%
Any account ownership, young adults (15-24 years), 2017	48%
Financial institutions account, adults, 2017	42%
Mobile money account, adults, 2017	39%
Saved at a financial institution, adults, 2017	16%
Saved semi-formally, in a savings club or with person outside the family, adults, 2017	19%
Borrowed formally, from an institution or credit card, adults, 2017	12%
Borrowed from friends and family, adults, 2017	23%
Poverty rate, 2012	13.6%

GSMA

Unique mobile network subscribers, 2017	18.9 m
Mobile penetration rate, 2017	67%

Central Bank of Ghana

Volume of MM transactions, 2016	550,218,427
Value of MM transactions, 2016	17,600.1 m US\$ <sup>8</sup>
Registered mobile money users (wallets), 2016	19,735,098
Number of agents, 2016	136,769
Licensed banks, 2017	35
Bank branches, 2016	1,341
Total assets, <sup>9</sup> 2016	21,639.9 m US\$ <sup>10</sup>

Mix Market

Licensed MFIs	81
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### Industry opinion:

*Who will be the leading provider of mass market financial services in Sub-Saharan Africa in 10 years' time?*

Strategy is key to the success of digital financial services. The growth of the DFS industry in Sub-Saharan Africa over the past ten years has come to challenge the traditional dominance of banks in the sector. Today there are a multitude of both competing and cooperating financial services providers on the continent.



Banks	(35%)
MNOs	(32%)
Fintechs	(30%)
MFIs	(3%)



## RESEARCH FOCUS

# Turning digital strategies into reality

*DFS hold much promise for financial inclusion. However, making the most of the opportunities offered by new technology and innovative business models is not easy. IFC and the Mastercard Foundation ran a unique, four-year longitudinal study to chart the journey of nine African microfinance institutions that are implementing digital channels, and their experiences have resulted in important insights for the industry.*

For most microfinance institutions, DFS is a completely new type of business. While potentially offering benefits and opportunities to provider and users alike, DFS are far from the MFIs core areas of expertise and comfort zone. Well-run digital services can extend geographical outreach and allow MFIs to scale up operations cost-effectively; they can facilitate a wider range of services and products; and they usually bring efficiency improvements and cost savings for the institution. As champions of financial inclusion, MFIs have the advantage of already knowing target users relatively well, compared to MNOs or fintechs.

The encouraging news is that early results from the longitudinal research indicate that a number of MFIs are starting to manage the challenges of deploying DFS, and are on the path to success.

Fundamentally, most DFS strategies adopted by the MFIs in the study were motivated by the two goals of extending reach to new clients, particularly in rural areas, while keeping the cost of this expansion low. Most of them also considered growing their deposit portfolio as a key objective for the new channel. Based on these objectives, the most common choice for the MFIs was to use DFS to deliver an agent strategy. Overall, this appears to have been a successful choice: the MFIs with the longest running agent banking channel have been successful in attaining the original strategic goal of expanding with lower cost.

According to the study data, transacting at agents represent around 25 percent less in operational cost than conducting a branch transaction. Those with mature agent networks (greater than three years) significantly increased their outreach, both in terms of clients and locations. Results for deposit mobilization, however, thus far indicate that it has taken quite some time for any of the MFIs to see a significant increase in the size of deposit portfolios.

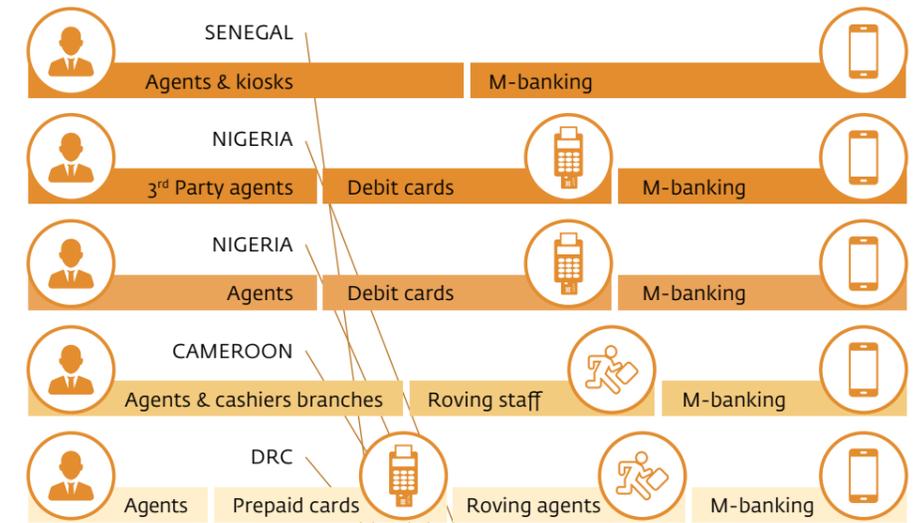
The study has identified several recommendations for the successful set-up, roll-out and management of a network of digital financial services agents:

**Agent location:** The most successful agent networks were usually established near MFI branches. The main reason for this was to facilitate agent liquidity management. The most difficult aspect of managing agents is ensuring that they have sufficient funds in their accounts to service cash-in transactions, typically loan repayments; and have sufficient cash to service withdrawals. Launching agents near branches also means that any early issues can be fixed quickly, before tackling the difficulties of managing agents at a distance. The synergy between agents and branches demonstrates that even where there is a successful agent network, branches remain relevant.

**Quality of agent network:** Many of the MFIs fell into the trap of wanting a large agent network as quickly as possible. Inactive agents are a cost rather than a source of revenue though, so focus needs to be on establishing and maintaining active agents. The median agent activity in this study was just 60 percent, but still higher than the global average at 51.4 percent. Over the three years of the study to date, the median agent activity rate has grown, suggesting the MFIs are getting better at recruiting and incentivizing quality agents. A critical mass of agents is necessary to launch, but this can be quite small. A structured agent recruitment plan is necessary, growing the number of agents with consumer demand. Two of the MFIs in the study started with fewer than 50 agents and are showing signs of success.

**Agent recruitment options:** The types of outlets suitable for consideration as agents may be specified by regulation to meet certain minimum standards. An MFI agent network study in the Democratic Republic of Congo showed that agents are generally most successful in densely populated areas that have a lot of commercial activity. Older agents were busier than younger agents, service-oriented businesses such as hairdressers and tailors outperformed retailers, and women agents proved to be significantly more

Microfinance institutions have adopted a variety of strategies to deploy DFS



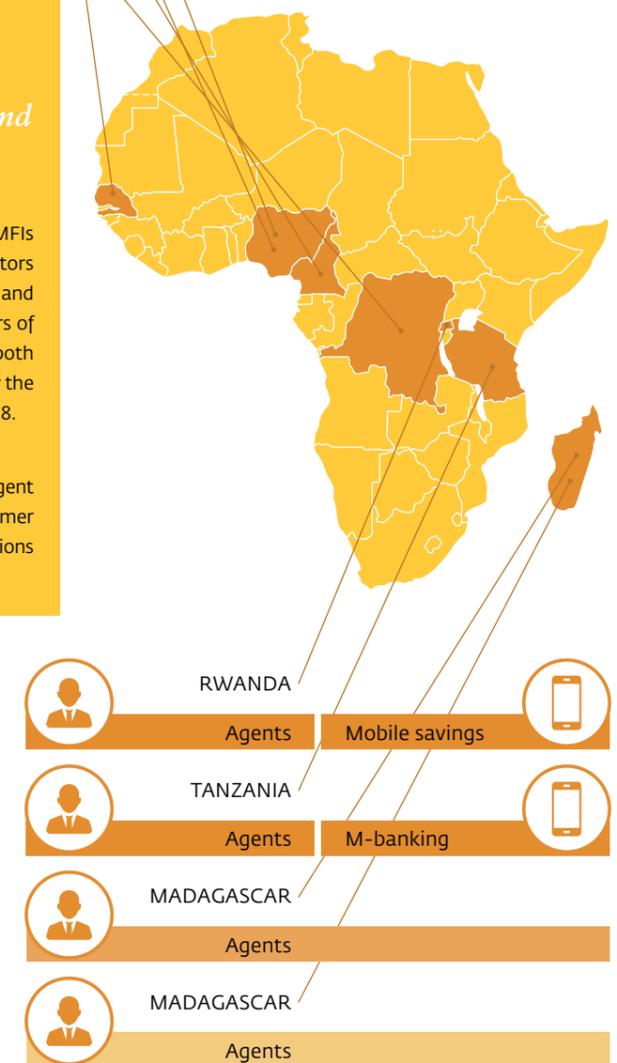
### Research question:

*Is DFS a viable strategy for microfinance institutions to extend reach to financially excluded populations?*

**Data collected:** A range of indicators from nine MFIs in Sub-Saharan Africa over four years. Indicators included number of agents, activity rates, number and activity rates of users, standard financial indicators of costs and profitability. Collection methods were both quantitative and qualitative, including site visits by the research team to each MFI once a year 2014-2018.

**Methodology:** Qualitative and quantitative.

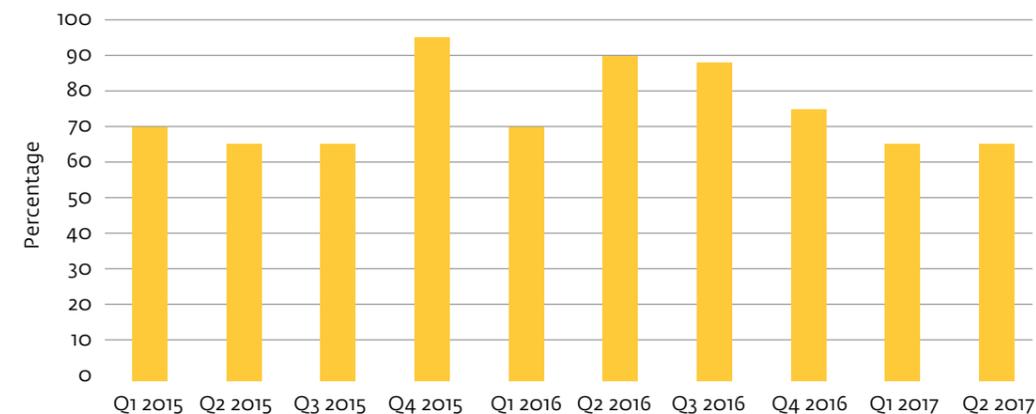
**Primary conclusion:** All MFIs have increased agent network size considerably and enlarged their customer base and channel user base. On average, transactions at agents cost \$0.31 less than at branches.



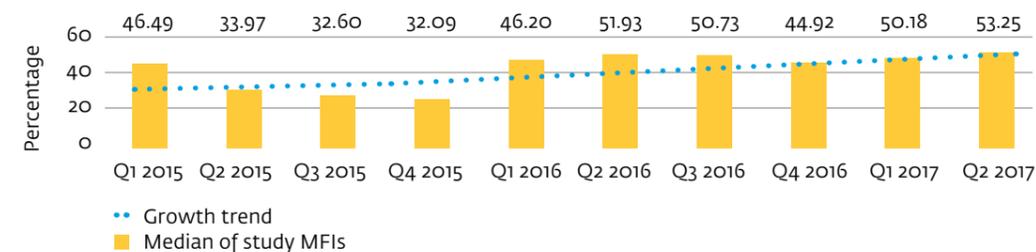


Interns tasked with conducting phone surveys with Zoono customers during a team meeting at the company's office in Lusaka, Zambia, on 9 January 2018.

Median number of active agents (as % of total agents) over the duration of the study



Median quarterly agent commission over the study period



successful than male agents, with both higher volume and value of transactions. Agent recruitment and management is time-consuming and often falls outside of providers core competence. The study shows that outsourcing such functions to aggregators can be beneficial, but also expensive.

**Agent business case:** Over the four years of this study, the median quarterly commission per active agent grew from US\$ 46.49 to US\$ 53.25, growing at 3 percent per quarter. Even though the number of agents grew at a faster rate than active customers, there were still sufficient additional transactions taking place to provide each agent with more revenue. This result is particularly encouraging because one of the MFIs reduced its agent commission per transaction part way through the study. Combined with the quarterly net 3 percent growth in active agents, this result shows that there was an increased client demand for agent services that overtook the growth of the active agent network. The question remains as to whether a quarterly income of US\$ 53 is sufficient to provide a cost-effective return to agents.

**Agent technology:** A common strategic consideration is which POS device the agent should use and who pays for it. POS selection can determine the success or otherwise of the digital strategy. Conventional dedicated POS devices can be disproportionately expensive compared with the revenue and commission that they will generate, and they also have technical limitations. Smartphones and tablets are better suited to the fast-changing digital environment and are easier to update as technology changes. Most of the MFIs in the study provided POS devices to agents for free, but as dedicated devices are expensive, the MFIs are considering making the agent pay a contribution towards the cost. Some already offer loans for POS devices at

preferential rates. Agents tend to expect the MFI to pay, given the unproven business case and the relatively low margins they can earn.

After gaining experience in the implementation of a digital channel, the MFIs in the study started considering the notion of providing better customer service and better products through this channel as strategic goals, and some have started working on ways to enhance the customer experience. For example, two MFIs have developed specific nano-loan products for delivery only via agents. Others have increased their agent service to include bill payments, transfers and mobile top-ups. Some MFIs are currently developing their own internal capacity to better analyze transactional data to improve agent performance and liquidity, and in this way, indirectly improve customer experience.

In Sub-Saharan Africa MNOs have taken a lead in providing accessible, affordable and sustainable financial services to previously excluded populations, but the study shows that there is also a role to play for MFIs. This is especially true for the provision of loans to small-scale entrepreneurs and rural communities. The regional microfinance sector has moved decisively to follow the digitization trend of the financial sector, with encouraging early results.

**Further reading:** *Partnership Field Note #7 Turning Digital MFI Strategies Into Reality* by Susie Lonie, with Gisela Davico and Julia Conrad.

*Benchmarking the Financial Performance, Growth, and Outreach of Greenfield Microfinance Institutions in Sub-Saharan Africa*, Policy Research Working Paper No. 7029. World Bank Group, by Robert Cull, Sven Harten and Greta Bull.

# Digital loans offer instant growth power to Madagascar's entrepreneurs

*Biometric fingerprint scanners enable Baobab customers to transact simply and securely, at an agent's premises in Antananarivo, Madagascar, on 16 February 2018.*



*In Madagascar, political instability and an economic slump has created a tough business climate for small-scale entrepreneurs. An instant digital nano-credit from microfinance institution Baobab provides innovative and welcome support for business growth.*

#### **Antananarivo, Madagascar.**

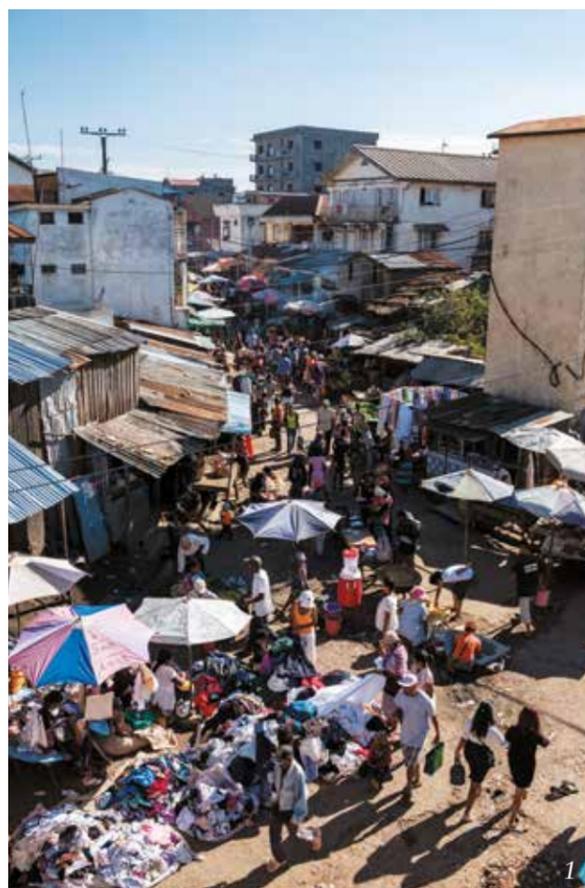
In December last year, a buzz called Voahirana Mamy Ravelonoro's attention from the salads and muffins on display in her restaurant to a text message on her phone. It was an SMS from her microfinance bank, Baobab Madagascar, telling her that she had qualified for a Taka loan.

"There was no paperwork," recounts Voahirana, or Vo as she is known to her friends. "I just showed up at the Baobab agent, showed them the text message I had received and my national identification card, put my finger on the biometric machine and withdrew the money."

The extra few hundred dollars came in handy for the Christmas season. Vo used it to buy flour, sugar and eggs for the small restaurant that she had recently opened. "In December, the price of eggs is very high because everyone is baking," she explains. With more stock, she was able to meet the increased demand over the busy period, when residents in her suburb of Madagascar's capital Antananarivo treat themselves to a snack as they peruse the market stalls lining the street.

With an annual GDP per capita of only \$401, people in Madagascar are among the poorest in the world. In the past few decades, the country has experienced several disputed elections and wrestles for political power. Following a rebellion in 2009, Madagascar went into a political stalemate, leading to international trading sanctions and a slump in the economy. In 2013, democratic elections resumed, but the situation is still considered fragile. At 18 percent, the financial inclusion rate is very low, and access to formal finance for small-scale entrepreneurs such as Vo very limited.

*Voahirana Mamy Ravelonoro, a client of Baobab Bank and a user of their Taka Loan product, at her restaurant Envie de Manger in Antananarivo, Madagascar, on 14 February 2018.*



“There is a lack of formal financial support for the people to meet their needs, and no well-defined social policy for helping the population,” says Jean Arnaldo Armand, the CEO of Baobab Madagascar (formerly Microcred Bank Madagascar).

As in many African markets, digital financial services are helping to push broader access to formal financial services in Madagascar, albeit still at a relatively slow pace. In 2016, Orange Money estimated that there were about 4 million registered mobile money accounts in the country’s population of 25 million, but only one out of eight of those accounts were considered active, meaning about 2 percent of the Malagasy actively use mobile money accounts.

For small-scale entrepreneurs such as Vo, time away from the business often means revenue lost, “and that can cause frustration,” says Armand. Speed has thus become a central priority for Baobab, a microfinance institution established in Madagascar in 2010 that aims to serve low-income people, small-scale entrepreneurs and rural populations. It launched an agent network in 2015 to provide some of its basic services with greater reach. There are now 304 agents in the country, almost ten times as many as the 37 bank branches. The agent network is the sole channel for certain services, such as the Taka loan, for example, which is redeemable at an agent rather than a branch, “to facilitate quick access to the money,” says Armand.

The instant nano-credit offered is available only to existing clients of the microfinance institution and based on a credit scoring model drawing on clients’ loan repayment and savings history. Eligible clients receive an SMS message letting them know how much cash they qualify for, and that they can obtain the loan through a Baobab agent. A key

aspect of the Taka loan is its incentive for quick repayment: if clients pay back the loan within 15 days, they become eligible for an increased loan amount the next time they borrow. If the client repays the loan within 30 days, they will be eligible for the same amount the next time. On the other hand, if the client repays the loan after 30 days, they will not qualify for another Taka loan in the near future.

Leveraging biometric technology for identification, Baobab’s agents are able to offer a fast, reliable and accessible service to its clients. When the technology was first introduced, the idea of digital financial services was still something novel in Madagascar. It has taken Baobab some time to get customers as well as the regulatory authorities on board.

“Now, after two years of convincing the clients, convincing the regulators, and training the staff, it is well on its way,” says Armand. Baobab’s goal is to be “completely digital” in the near future.

Vo, who is a long-term client of Baobab, says she goes to an agent when the bank queues are too long. But according to Tsiaronirina Rabenasandrata, a Baobab area agent manager in Antananarivo, the agents also reach people that the bank branches do not.

“When people come here, they are more anonymous and less intimidated than walking into a bank,” she says. She believes that the biometric technology also makes Baobab’s services accessible to those who are illiterate. “It’s really helpful for people who can’t read or write,” she says, “With other systems, people might need to remember a code or a password, but here they just need to put their fingerprint, and that’s it.”

1. A view of the street where Voahirana Mamy Ravelonoro’s restaurant is located in Antananarivo.

2. An agent for Baobab and various mobile money services.

3. Voahirana Mamy Ravelonoro (right), a client of Baobab Bank and a user of their Taka Loan product, with customers at her restaurant.

4. Voahirana Mamy Ravelonoro loading call credit onto one of her phones.



Fifteen years ago, when Vo opened her first business, a beauty salon called *Aux Envies de Beauté*, the space was little more than a garage. She used her first Baobab loan of about \$250 to replace the stained wooden roof with a new ceiling, tile the floor and paint the concrete walls a fresh white. With subsequent loans, Vo was able to further expand and upgrade the business. Red leather chairs and framed mirrors now surround the walls. In one corner is a professional wash basin and a massage bed, decorated with fabric flowers. Most recently, Vo was able to set up her small restaurant. Business at the eatery has swiftly taken off, and she now has four full-time employees. Among them are chef Andry Ranaivojaonarilala. “With this job, I have a comfortable life. I am able to provide for my wife and children,” he says.

Every week Vo earmarks a portion of her earnings for loan reimbursements, a savings mentality that has helped her take out and pay back five Baobab loans. If necessary, the family makes lifestyle sacrifices in order to meet their commitments.

“We eat green leaves and oil,” says Vo, quoting a Malagasy idiom. “People tell stories about the bank, how it will come to your house and take your things,” says Vo’s husband Irmin. “But when the bank seizes people’s possessions, it is because they didn’t use the money for the reason they requested it. Instead, they buy delicious food or a new mattress,” he says.

The overall financial discipline of the Malagasy people and Baobab’s own rigorous vetting process means the default rate on its loans is very low, despite the challenging economic climate. “Every month, 97 percent of our customers pay back their loans,” says Armand. Longer-term Baobab loans are generally used by small entrepreneurs to grow their businesses, while the short-term Taka loans fulfill a variety of needs, from providing cashflow injections for businesses such as Vo’s restaurant, to helping parents pay school fees or bills at the end of the month.

Baobab is making efforts to increase financial literacy and good borrowing behavior in Madagascar. The company provides ‘money management’ training workshops to MSMEs, and extensive financial advisory support to clients through field-based portfolio managers. Vo’s portfolio manager, Sandrata Andrianatoandro, has been working with her for several years. She ensures that Vo is using her borrowed money productively, and advises Vo how best to repay her loans. After assessing her financial position, Andrianatoandro encouraged Vo pay back her most recent loan over a shorter period of time than normal. “If Vo pays the loan back quicker, she will pay less interest,” she points out.

Baobab receives much of its business by word of mouth. Marie Hortense Raharimalala, for example, heard about the Taka loan from a friend. “I decided to pop in to see if I qualify,” she says, sitting on a bench at a Baobab agent.

As an existing Baobab client, the teller looks her up on the Baobab system, confirms that she qualifies for a Taka credit for a specific amount, and immediately gives her the cash. Raharimalala will use it to buy woven baskets from Ambatondrazaka, north of the capital. She then adds finishing touches, such as leather handles and embroidered designs, and sells them at a nearby market for more than four times the amount she buys them for. “The Taka loan is Baobab’s most helpful service,” she says.

Vo and her husband Irmin are enthusiastic about the possibilities that access to credit has offered them. “Using Baobab has significantly improved my life,” says Vo, looking out over the busy street outside her restaurant. “We have more clients at the salon, we’ve been able to open the restaurant, and now we even have a car.”

Irmin says the success is based on a “trusting relationship with Baobab.” The pair prioritize their loan repayments, qualify for more loans, and are thus able to grow their businesses. “We keep in mind the scripture in Job 8:7, ‘And though thy beginning was small, yet thy end should greatly increase’.”

*Voabirana Manry Ravelonoro during a quiet moment at Envie de Beauté, her salon in Antananarivo.*

Marie Hortense Raharimalala, Baobab Taka loan customer:

“ The Taka loan is Baobab’s most helpful service.”



**Tsiaronirina Rabenasandratra, Baobab area outlet manager:**

*“It really helps to have digital-based financial services, but it shouldn’t be too high tech.”*



**Soahanginirina Razafindrahanta, teller at a Baobab agent:**

*“When I have connectivity problems with one service provider, I switch to another, using a tablet.”*



**Sandrata Andrianatoandro, portfolio manager for Baobab:**

*“Most of our clients are entrepreneurs who have little chance of getting loans from traditional banks.”*



**Edmei Rajaonary, business owner of Asterale Essential Oils:**

*“I think the reason that many people in Madagascar don’t use banks is really a matter of distrust. People don’t really trust banks, especially the fees they have to pay.”*

Marie Hortense Raharimalala visiting a Baobab Bank agent to take out a Taka instant loan.

2

# TECHNOLOGY

## A tough choice: selecting the right technology

*The world of DFS technology, with the wide range of delivery channels, technology platforms, and communications and device options, can be daunting. A limited understanding of the technology options available and the role technology plays in the development of a digital channel can lead to significant costs, delays and even failure to implement.*

Technology is central to the deployment of digital financial services and their ability to provide affordable, accessible and sustainable financial services to people who were previously often excluded from traditional bank services. Mobile and agent banking solutions rely on technology to enable instant transmission of financial and non-financial information between the financial services provider and customers to be able to cost-efficiently provide access to financial services ‘anywhere, anytime, anyhow’.

New technologies also increase efficiency through automation, reduce operational cost, and improve service quality by cutting down on waiting times and offering more convenient access and reduced cost to the end-consumer. But as a financial services provider, how do you know which technology to buy? There are many examples of market actors that have invested sizeable funds in acquiring DFS technology that has not delivered the desired solution on the ground.

Fidelity Bank is a tier one bank in Ghana with close to one million customers, 80 branches, 110 ATMs, and 1,000 banking agents. In 2013, it set up a Financial Inclusion Unit to pioneer agent banking to extend its reach to the seventy percent of Ghanaians who remain financially excluded.

Its flagship product is the Smart Account, an entry-level card-based product using agents for basic services normally provided at bank branches. It was initially launched in July 2013, with a rapid deployment of agents, customer uptake and volume of transactions. However, the service quickly experienced growing pains. This was partly due to the novelty of agent banking in the market, and partly due to an inflexible technical system that was unable to cope with the increased demands on it from a fast-evolving service. There were significant issues with unplanned downtime and high transaction failure rates that forced the team to focus on constant fire-fighting instead of business development.

Agent banking was in its infancy at the time and few technologies had a proven track record. In 2016, Fidelity engaged IFC in advancing its agent banking services, and one of the first tasks for the project team was to help address the technology challenges. A fundamental decision had to be made whether to maintain and extend legacy software using the incumbent software development firm, or whether to opt for a new solution.

In other markets, FSPs are frequently tempted to select a vendor in a rush or to commence in-house development with little or no consideration for which enabling technology best suits its strategy. It is important to carefully consider the implications of using one technology over another, to ensure that the technology platform selected is aligned with and therefore enables the organization to

meet its business objectives. Determining the technology platform, which requires decisions at both the application and device layer, needs to happen before a FSP can proceed to vendor selection and implementation activities. Once done, work to identify the best vendor can start. Some FSPs have found that an in-depth gap analysis and requirements workshop with a small number of prequalified vendors can yield a successful selection. This approach typically requires some consulting fees upfront, but can contribute to considerable cost savings in the long term, because the FSP will be equipped with a deeper understanding of the vendor’s solution and skills before commencing the full implementation.

For Fidelity, the IFC project team introduced a formalized and comprehensive requirements gathering, evaluation and scoring methodology to streamline the vendor selection process, and then worked with the Fidelity team to clarify solution design and requirements. A requirements document was developed that was translated into a Request for Proposals and scoring sheet, used to short-list vendors for presentations. Introducing a scoring mechanism brought awareness and clarity to the selection process, and allowed reviewers to present their perspectives in a way that could be consolidated into an optimal solution. Once the optimal software solution had been identified, a more fully detailed set of requirements was developed to assess the timeframe required to install and configure the necessary technology. Finally, a consolidated work plan was developed that combined technology, organizational, training and marketing work streams to expedite a smooth and efficient implementation process.

In addition, the IFC team advised the bank on overall technical architecture in support of a new initiative to set up an innovation unit and in preparation for anticipated expansion, including partnerships with third party fintech. This included the design of a range of capabilities, such as foundational database and interface criteria, program interfacing for third party collaboration (APIs), standardized contracting for vendors, operating procedures, and service level commitments for partnering firms. With this in place, the bank is able to design its infrastructure with a long-term view of its future requirements.

Based on the established selection process, Fidelity acquired and deployed a new agent management system that brought greater stability to the technology used by agents to onboard and serve customers. Users have also seen an improvement in the service, with greater system stability, speed and efficiency. The intermittent outages experienced previously have drastically reduced, and Fidelity is set to launch a marketing drive in 2018 leveraging the new platform to provide a customer experience that will instill trust in the service and improve agent confidence in the service. Still the only commercial bank in Ghana to offer agent banking, Fidelity is optimistic that its new technology platform will help achieve its channel goals.

## Digital banking is not equal to technology

**By Fahima Said Bille**

*IFC Associate Operations Officer, Nairobi, Kenya*

It is becoming increasingly evident to traditional financial services providers in Sub-Saharan Africa that digitization is not an optional extra or a sub-business, but a tool to modernize and adapt an existing business to a new market reality. Some banks decide to set up wholly owned online or mobile banking subsidiaries; others opt to partner with fintechs and MNOs; a few undergo a complete digital transformation, including partnerships.

For any bank considering digitization, it is important to understand that digital transformation is not primarily about new technology, fancy apps and millennials. It is a new way of working that enables the institution to take advantage of innovation to quickly and seamlessly react to a more diverse and rapidly growing market demand. For established banks in some African markets, this may be crucial for long-term survival. Traditionally, banks rely on siloed teams and a sequential approach to product development. In a digital bank, the culture is one of multi-functional teams that can quickly adapt to change. Such teams release products within weeks, not months, and are continually upgrading these products. It’s about creating and introducing client-centric solutions, agile methodologies and lean decision-making processes.

This can be a challenging process for institutions. In addition to acquiring the right technology to enable digital channels, ‘going digital’ may require changes in management structure and decision-making hierarchies, re-organization, and recruitment of new staff or up-skilling of existing staff. Market leaders show that a clear strategy and roadmap that is understood by all stakeholders help, as well as a decentralized leadership approach. While technology enables innovation and change, you also need to change to leverage the technology.



## MARKET OVERVIEW

### Kenya: Pioneer showing benefits of financial inclusion

With a population of 47 million, Kenya is the economic, financial and transport hub of East Africa. Despite this, its population is largely agrarian with three-quarters living in rural areas and 61 percent being employed at least part time in agriculture, mainly as smallholder farmers. Agriculture remains the backbone of the economy, providing one third of the GDP. Recently, Nairobi has emerged as a fintech hub, with its 'silicon savannah' status based on opportunities arising from the success of its DFS sector, shortcomings in local financial institutions, and a favorable regulatory environment.<sup>1</sup> However, even with GDP growth of more than 5 percent for the last eight years, unemployment is high and 34 percent of its people still live in poverty.

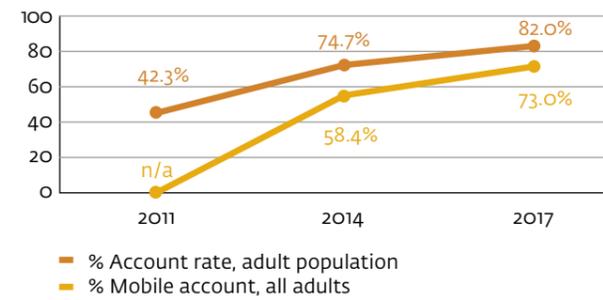
Financial inclusion is high, with 82 percent of adults having an account of some form in 2017, largely driven by the impact of mobile wallets. The number of Kenyans with a formal bank account has also grown significantly over this period. Excluding bank/MNO savings and loan partnerships, the number of banked customers has grown steadily in the last ten years, suggesting that the introduction of mobile wallets has had a synergistic effect. A number of Kenyan banks now offer mobile banking services. The Cooperative Bank has created a wallet, M-Coop-Cash, targeting the unbanked. Equity Bank, with its large customer base and a strong focus on financial inclusion, decided to compete directly with M-PESA by becoming a mobile virtual network operator or MVNO and launching its own mobile wallet. The Equitel service has proven popular and grown the bank's customer base, but growth has been less than its historical averages. Analysis suggests that, whilst it is still early days for Equitel, a substantial part of its uptake has been by existing Equity Bank customers.<sup>2</sup>

Kenya has the largest and most successful mobile money sector in Africa and has consistently led the continent both in scale and innovation since the launch of M-PESA in 2007. By 2017 there were 37.4 million mobile wallets, giving 133 percent penetration of the adult population. There are 6 services available, with 81 percent of wallets held by Safaricom (M-PESA), and a further 6 percent each by Airtel Money and Equitel. The market is dominated by just two services: of the US\$ 16.6 billion transacted between July and September 2017, 80 percent was by M-PESA and 19 percent by Equitel.<sup>3</sup>

A wide range of services are available via mobile wallets. M-Shwari micro-savings and loans based on usage of both the mobile wallet and mobile network have been available since 2012, and have proven to be extremely popular both in Kenya and other markets where the model has been copied. However, the biggest breakthrough that the Kenyan market has achieved since the launch of DFS is probably the wide-scale acceptance of M-PESA for retail (merchant) payments. In most markets, including Kenya, the majority of financial transactions occur in shops, but shopkeepers are generally hesitant to accept digital payments due to merchant fees, tax, and administration considerations. Still, by 2015 there were 49,000 merchants in Kenya accepting payments and nearly a million customers using the service every day; acceptance of 'Lipa na M-PESA' is now near-ubiquitous.<sup>4</sup> Merchant acceptance has largely been driven by consumer demand, but many shop owners were also wooed to the service by the offer of low cost loans based on their customers' usage of M-PESA. Payment by bank card has been in steady decline in recent years, and this may be related to the success of mobile wallets in retail. In 2017, Kenya became the first country to launch a mobile-only retail bond, M-Akiba, allowing micro-investments in government securities with investments as low as \$30. This proved to be so popular that the bonds sold out in 13 days.<sup>5</sup>

The Kenyan regulator has long taken a 'wait and see' approach to DFS, allowing MNOs to issue e-money and operate partnerships to deliver financial services. Intervention has recently happened in the context of interoperability between mobile wallets. Concerned by the near-monopoly of Safaricom, the M-PESA provider, CBK, has ruled that interoperability for domestic remittances must be made available by early 2018. It is hoped that this move will improve efficiency, increase competition and bring down the cost of transactions.<sup>6</sup>

Overall financial inclusion rate vs mobile money account rate



World Bank, Findex

Any account ownership, adult population, 2017	82%
Any account ownership, women, 2017	78%
Any account ownership, young adults (15-24 years), 2017	76%
Financial institutions account, adults, 2017	56%
Mobile money account, adults, 2017	73%
Saved at a financial institution, adults, 2017	27%
Saved semi-formally, in a savings club or with person outside the family, adults, 2017	35%
Borrowed formally, from an institution or credit card, adults, 2017	19%
Borrowed from friends and family, adults, 2017	45%
Poverty rate, 2005	33.6%

GSMA

Unique mobile network subscribers, 2017	28.3 m
Mobile penetration rate, 2017	59%

Central Bank of Kenya, AFSD

Volume of MM transactions, 2016	104,193,459
Value of MM transactions, 2016	7,100 m US\$
Registered mobile money users (wallets), Dec 2017	37.39 m <sup>7</sup>
Number of agents, 2016	53,833
Licensed banks, 2016	42
Bank branches, 2015	1,523
Total assets, 2015	34,164.6 m US\$

Mix Market

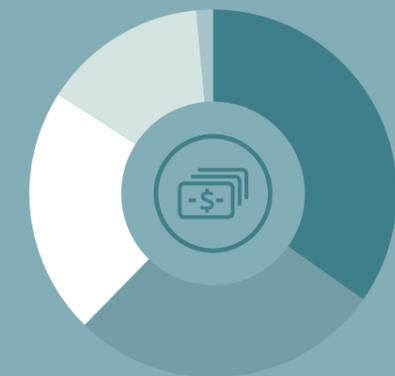
Licensed MFIs	55
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### Industry opinion:

*What is the most important application of blockchain technology?*

DFS technology is progressing quickly and it encompasses everything from hardware, including near-field-communication and biometric applications, to software such as Application Programming Interface (API). New blockchain and distributed ledger technologies are being tested with diverse types of applications. It is generally accepted that blockchain will address many challenges of transparency and efficiency, and it has been used to develop e-currencies such as BitCoin. However, with experimentation taking place across a multitude of products, its primary use case is yet to be defined.



Value Chain Payments	(35%)
Currency	(28%)
Remittances	(22%)
Other	(14%)
Insurance	(1%)



## RESEARCH FOCUS

# Twelve steps to leverage new technology for financial inclusion

*New technology and innovative business models have brought about a revolution in financial inclusion in recent years, bringing formal financial services to millions of people who were previously excluded. But how does a financial service provider decide which technology to choose to go digital? It is a critical choice that depends on much more than just technical specifications.*

Ten years after digital financial services took off in Sub-Saharan Africa, the technology options available to financial services providers are many and increasing. Choosing the right technology for a DFS deployment is not easy. It's a process that requires technical knowledge, specialized skills and the ability to be forward-looking. A history of failed IT implementations, limited budgets, and regulatory constraints can result in poorly planned and implemented DFS services. There are today as many disappointing experiences in the market, with poor uptake on channel platforms that are clunky, inflexible or costly, as there are successes.

In 2015, IFC and the Mastercard Foundation launched the Alternative Delivery Channels and Technology Handbook, the first in a series of handbooks aimed at helping to build critical industry knowledge to support the advance of DFS and expansion of financial inclusion in Sub-Saharan Africa. It is a tool for financial service providers to increase the technical understanding of DFS platforms and to provide practical guidance on how to approach a DFS technology project. While the focus of the handbook is on the technical aspects of DFS implementation, it also covers a host of other market and business factors to consider. It was written together with technology consultancy Software Group, based on the operational learnings of the Partnership for Financial Inclusion and the market as a whole.

The handbook presents a 12-step framework for the successful implementation of a DFS technology project. This framework is based on the understanding that all DFS projects must be based on a well-researched channel strategy that guides all future steps in the implementation process. Equipped with a strategy, the next step for the FSP is to consider and select the technology platform(s) best suited to the strategy. This step is a prerequisite to vendor selection, as it forms an important input to the requirements or specifications used to select the vendor(s). Once this information is available, and a vendor or partner selected, the FSP can finally implement the preferred channel solution.

The handbook shares a number of lessons learned, harnessed from project implementation and market observation:

**Use existing platforms to test out new channels.** Where possible, build on existing networks rather than launching your own, especially if this is the first foray into DFS. Integrations to existing networks are not only cheaper in terms of technology, but also allow you to observe responses from the market to see if the uptake warrants the larger investments required for proprietary solutions. This same lesson could easily be applied to the decision of whether to rent, buy, or build. Establishing a proprietary network may be justified when customer experience with existing networks is poor, for instance due to poorly trained agents, high prices, or frequent network downtime.

**Challenge your current processes to maximize impact.** To get maximum benefit from DFS, a FSP must be ready to really challenge existing processes or ways of doing business and to include business process reengineering as part of the implementation process. FSPs need the courage to leave old processes behind in order to enhance the customer experience and take full advantage of potential cost and time savings, as well as to optimize operations. This is especially necessary for extension service channels whereby third parties or remote users are now embedded in processes that were either branch- or paper-based before, and now have the potential to be fully digitized. Change management is critical for such projects. Despite the tendency to blame failed DFS projects on technology, deeper investigation often reveals the root cause as poor change management, with internal factors preventing the overall success of the project.

**Channel** is the customer's access point to a financial service provider; who or what the customer interacts with to access the financial service or bank account.

**Device** is the physical object with which a user interacts, such as a point-of-sale device or a mobile phone. Mobile phones can be classified as being either basic, feature or smart.

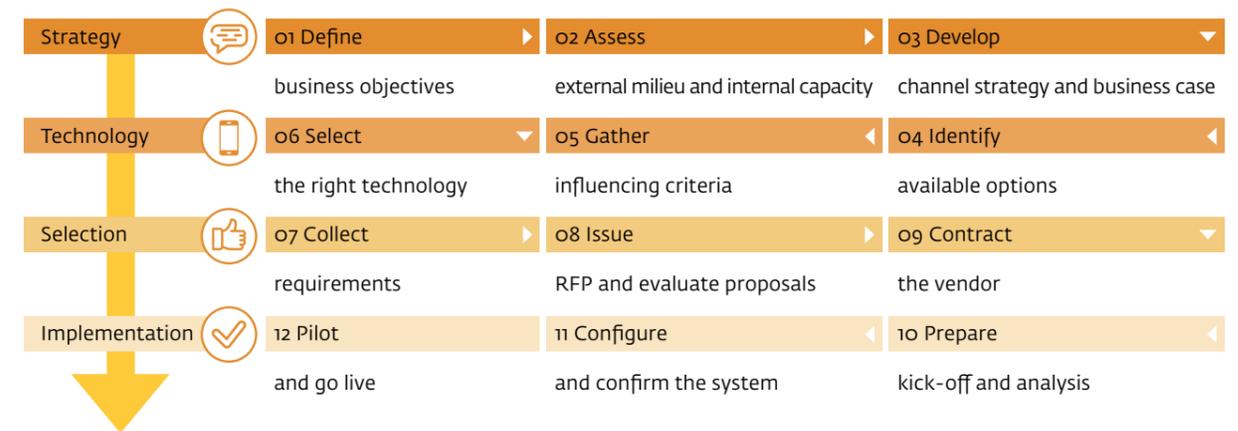
The **application** layer of DFS solutions consists of front-end applications, back office administration modules, and the integrations between these systems and the Core Banking System.

DFS solution architecture: front office, back office and integration





ADC technology implementation process



**Pick partners carefully.** Most DFS projects require some type of partnership between the FSP and other parties, such as m-wallet providers, USSD aggregators, MNOs, or a technology vendor. The success of the DFS may ultimately depend on the strength of these partnerships, making it a worthwhile investment to spend time in the initial selection process and to continually review these arrangements over time. It's important to ensure that the business model for the channel sustains all parties involved and that competitive forces are aligned for the greater good of the partnership. Partnerships must be both patient enough to cope with slow growth initially, and yet flexible enough to adapt and scale in response to the market over time. Additionally, partners need to consider both direct and indirect value that may arise from the DFS, and assess the impact of regulation on partnerships. FSPs need to invest time and resources to critically assess compatibility, strategic focus, and commercial alignment to create a win-win partnership.

**Prioritize flexibility and scalability.** Although flexibility is important in all IT systems for FSPs, it is perhaps even more critical with respect to DFS, as in many cases the FSP does not yet know how the market will respond or what will be needed in future. A foundation infrastructure built around a centralized integration platform or switch can ease the burden of adding new channels or integration partners over time, and give the FSP assurance that integrations are done against a common standard. Having catered for this level of flexibility, it is important for the FSP not to adopt new technology too quickly, but rather take the time to see which technologies are proving themselves in the market before incorporating these in its solution. A balance needs to be struck between staying in touch with the market

demands of the customers and ensuring a stable and reliable transactional platform on which to extend services.

**Consider the context carefully.** FSPs should remember that there is no 'one size fits all' in terms of channels. FSPs need to consider both the external and internal environments, and care must be taken not to presume that what was successful in one place will necessarily be successful in another place.

**Adopt an ever-evolving strategy.** As with all strategies, periodic reviews are recommended to assess how the institution has performed against its goals and whether the strategy needs to be adjusted based on technology trends, changes in customer expectations, and other relevant feedback from the market and operational results. This does not mean reinventing the channel strategy on an annual basis, but rather making adjustments and enhancements to align with new conditions. These reviews should be supported by pre-defined performance metrics or KPIs, which measure use, user satisfaction, volumes, downtime, and other relevant statistics which can be extracted via tools and reports that monitor channel operations over a period of time to compare trends and benchmark with other market data. Depending on the results of these reviews, FSPs may need to go back to the drawing board periodically to adapt to changes in technology, demand, and competition. The technology that makes up the DFS should be dynamic and flexible enough to support this evolving channel strategy.

**Further reading:** *Alternative Delivery Channels and Technology Handbook*, by Geraldine O'Keefe, Charlene Bachman, and Omoneka Musa.

# 3 AGENTS

## DFS providers rely on their agent networks

*Agents are a crucial component of digital financial services implementations. Without agent networks to perform cash-in and cash-out, the DFS of today would not function. By default, agents are also the face of the providers to the users, and all aspects of DFS that relate to customers, products and user experience involve agents. If the agent network is weak, the entire business could be at risk.*

On the face of it, Lesotho has a surprisingly high level of financial inclusion for a small nation in Sub-Saharan Africa. In 2014, 59 percent of adults had some form of account with a financial institution – almost double the regional average of 28.9 percent. This numerical achievement is, however, mainly due to the fact that a sizeable proportion of the population holds some form of funeral policy, with the population left largely unbanked in terms of access to other financial services.

Vodacom Lesotho launched M-PESA in June 2013, aiming to provide a suite of affordable and accessible digital financial services to the unbanked, especially for storing value and for remittances. Today the service allows for users to send money, redeem cash tokens (over-the-counter remittances from a non-registered user to a registered or non-registered user), and perform cash withdrawals, as well as pay for electricity, water and TV services (DStv). Adoption of the service picked up quickly following the initial launch, then stalled.

IFC partnered with Vodacom Lesotho to get growth back on track, with the task to review the M-PESA operations, propose solutions to problem areas, and help implement the



necessary changes. IFC's review focused primarily on agent management, customer acquisition, business planning and financial modeling.

To understand the challenge at hand, the IFC team started by analyzing agent transaction data, and found that only about one-third of the existing agents that were active on a 30-day basis (performing at least one transaction per month) were breaking even or were profitable. The float support offered by about 20 super agents and Vodacom shops was insufficient, leaving some agents underserved. It was also clear that the distribution of agents could be strategically improved, with a better match between agent locations and customer coverage.

With agent networks, DFS providers can choose to set up a proprietary network, partner with another or other providers, or outsource the network altogether. Similarly, agent network management can be provided in-house, by a partner, or outsourced. The optimal design will depend on the specifics of the market, regulations, and the needs and capacity of the provider. Key considerations include the ratio of agents to customers in any given location (driven by number of transactions per customer), the ability for agents to manage liquidity, branding and visibility, and the capacity of agents to provide customer education and support. Regulation may only allow for a certain type of agent networks, or place specific requirements on agent selection and accreditation. Vodacom Lesotho has outsourced agent management as they see this as the most optimal model for their market/operations.

To assist Vodacom Lesotho in improving its agent network, IFC provided benchmarks for what levels of activity would be required by its agents to make the service commercially viable and sustainable along the value chain. It recommended that the agent management structure be reduced from 20 to only four aggregators, each having a clear sub-structure of agents to service and an investment to match this responsibility. It was proposed that Vodacom shops only act as a back-up to the new aggregator system to avoid encroaching on the revenue base of the aggregators.

IFC also helped design and implement a foundational training program for Vodacom's entire agent base to ensure agents understand the value proposition of the service. Most agents in DFS implementations on the continent are small-scale informal businesses with little or no financial training. While often astute entrepreneurs, many seem to accept the offer to serve as a DFS agent on an opportunistic rather than informed basis – with the risk that they will quickly underperform and lose interest in the partnership. This can have a long-term damaging effect on the growth of the digital financial services ecosystem.

A common mistake made by providers is to attempt to enlist as many agents as possible to swiftly roll out a service, often in response to management pressure or competition. However, the quality of agents matter as much as quantity. To Vodacom Lesotho, IFC recommended that it recruited only those agents that meet the minimum liquidity requirements determined by the business case. Following the initial basic training of the agents, IFC also helped put in place a system of regular agent forums for agents to share experiences with each other and Vodacom, as well as a reward scheme to motivate performance and strengthen morale.

Vodacom's agents now have a better appreciation of their role and business case, reflected in their evaluation after the training. IFC and Vodacom are confident that the understanding of the service, motivation from agents, implementation of recommended float supply system, growth in customers, and agent transactions will improve significantly.

Ensuring that the agent network operates optimally is crucial to DFS implementation, and it helps to get things in place the right way from the start. Restructuring processes often include having to cut staff or re-negotiate with partners, in this case aggregators, and such processes can be challenging. The case of Vodacom also illustrates how important it can be for a provider to maintain at least a certain level of control over agent management, even when most such functions are outsourced. While outsourcing agent management may appear to be an obvious solution for institutions that lack initial experience of similar operations, in the long run it may be costly in terms of an underperforming network and sluggish service growth. One solution can be to outsource agent network build-up and management until the necessary internal knowledge and expertise has been built, and then bring the service back in-house.

## The three keys to a successful agent network

By John Ngahu

IFC Operations Officer, Johannesburg, South Africa

Working on a variety of DFS projects in Sub-Saharan Africa, I have observed with striking consistency how the health of an agent network determines the viability of a DFS service. A well-functioning agent network, guided by clearly defined processes and standards, can be the difference between success or failure. An efficient network is the best way to address some of the common challenges of struggling DFS services, such as low activity levels or liquidity constraints.

Building a good agent network is hard work. It takes time and it doesn't come cheap. It is a long-term investment, and I find there are three keys to getting it right:

- **Sourcing quality agents:** Good agents are hard to find. If you find them, they are not yours to keep. Most markets have legislated against proprietary agents so any investment you make in them makes them more attractive to the competition. All the same, you need top quality agents and should never use sub-standard hiring criteria or bend your criteria.
- **Good network management:** Agents need constant guidance and supervision. If you make it a box-ticking exercise or outsource or abandon management altogether, agents will reciprocate by divesting their funds, providing poor customer services or even committing fraud.
- **Incentivize your agents:** Any agent will tell you that higher commissions will get them working harder. When price competitiveness will not allow higher commissions, there are many other ways to make agents happy: training and certification, awards and recognition, branding, etc. The choice is yours.

Agents are an invaluable part of the DFS ecosystem. A good agent will educate and onboard users, deliver a good customer experience, ensure there are no liquidity issues, act as brand ambassador and engage the market, and harness market intelligence and insights. You can't afford not to have good agents.



## MARKET OVERVIEW

### Democratic Republic of Congo: Promising – but challenged by instability

The Democratic Republic of Congo is the largest country in Sub-Saharan Africa and is endowed with vast natural resources, including mineral wealth and fertile soil. It has one of Africa’s largest populations at 83 million, of which 57 percent live in urban clusters spread throughout the country. Only 11 percent of the land is used for agriculture, and two-thirds is covered by forests. Following years of conflict, economic recovery was driven by resurgence in the mining sector until 2015 when the price of copper, the DRC’s primary export, plummeted. This led to reduced reserves and currency depreciation.<sup>1</sup> Political instability also remains an issue. These factors led to inflation reaching nearly 50 percent in 2017. Poverty remains widespread, affecting 77 percent of the population, and the DRC failed to meet any of its Millennium Development Goals by 2015. Despite these issues, the opportunities offered by this resource-rich nation make it attractive to potential investors, including many African banks and fintechs, in the longer term.

Consumer confidence in the banking sector remains low following the collapse of several banks during the national crises of the 1980s and 1990s when many people lost their deposited savings. Access to banks is also constrained by the limited branch network. The cost of ‘brick-and-mortar’ branches is prohibitively high and, as a result, there are just 10 bank branches for every million adults. In 2011 the government established a ‘national microfinance fund’ to facilitate growth of the microfinance sector and improve the regulatory framework. Since then, a number of financial institutions have created agent networks to increase their reach. However, an ongoing challenge to financial account ownership is a widespread lack of KYC documentation. A further complication is that the DRC operates multiple

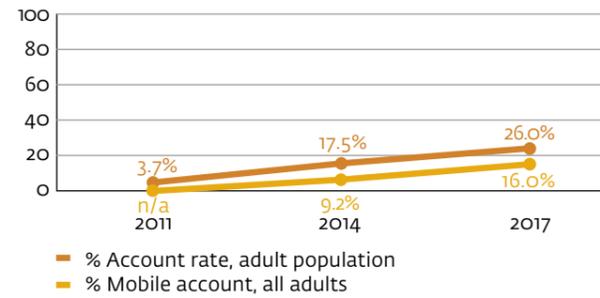
currencies: the national currency is the Congolese franc, but US dollars are also accepted as cash for most transactions, and some organizations only operate in dollars. All MNO call services are conducted in US dollars with top-ups paid for in francs, resulting in US dollar credits to the phone at an agreed exchange rate. Mobile money services use a similar model.

In 2011, the central bank granted a waiver to FINCA, the largest MFI in the DRC, allowing the creation of an agent network. Today, FINCA has 1,300 agents handling 85 percent of the MFI’s transactions. These agents provide a range of services to FINCA clients, such as cash in/out, loan repayment, and transfers between accounts. Within three years, results at agent outlets were four times FINCA’s initial targets.<sup>2</sup> It plans to extend its services beyond Kinshasa to a further 200,000 new customers by 2019.<sup>3</sup> Procredit Bank offers a mobile banking service named the L’Ar-phone service. Kenya’s Equity Bank took over Procredit in 2015, demonstrating the financial community’s optimism about the longer-term prospects for the DRC. Though starting from a structurally underdeveloped base, the DRC has had some success in leveraging mobile money and agent banking for the expansion of financial inclusion.

Regulation requires financial institutions and entities called ‘electronic money institutions’ to apply for licenses to issue e-money, and thus engage in agent and mobile banking. MNOs need to establish a subsidiary, incorporated as an electronic money institution with a minimum capital requirement of US\$ 2.5 million to be eligible for a license. The value of e-money issued by license-holders must be matched by an equivalent amount of ring-fenced funds in a bank account that cannot be intermediated.<sup>4</sup>

The MNOs are well-represented in the DRC, with seven networks available, and a quarter of the population have a mobile phone. GSM coverage only reaches a little more than half of the population, and there are reported challenges around network reliability.<sup>5</sup> Whilst 3G data coverage is expanding, it still reaches a minority of the population. In 2012, Airtel, Tigo and Vodacom acquired e-money licenses and launched mobile money services. Two years later, in 2014 there was no clear leader, and usage was still very small, with only 380,000 active users in total.

Overall financial inclusion rate vs mobile money account rate



World Bank, Findex

Any account ownership, adult population, 2017	26%
Any account ownership, women, 2017	24%
Any account ownership, young adults (15-24 years), 2017	24%
Financial institutions account, adults, 2017	15%
Mobile money account, adults, 2017	16%
Saved at a financial institution, adults, 2017	5%
Saved semi-formally, in a savings club or with person outside the family, adults, 2017	11%
Borrowed formally, from an institution or credit card, adults, 2017	4%
Borrowed from friends and family, adults, 2017	23%
Poverty rate, 2012	77.1%

GSMA

Unique mobile network subscribers, 2017	21.0 m
Mobile penetration rate, 2017	26%

Banque Centrale Congo, AFSD

Volume of MM transactions, 2016	11.5 m
Value of MM transactions, 2016	148.1 m US\$
Registered mobile money users (wallets), Dec 2017	14,170,631
Number of agents, 2017	71,383
Licensed commercial banks, 2015	18
Bank branches, 2015	403
Total assets, 2014	16,208.37 m US\$

Mix Market

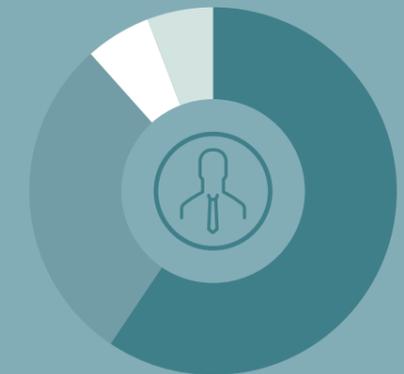
Licensed MFIs	30
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### Industry opinion:

*Do you believe that the importance of agents will decline over time?*

DFS agents are the face of the provider to the customers and an essential part of DFS. Without expansive agent networks providing cash-in and cash-out services, today’s DFS operations would not be possible. However, as the industry moves towards a more cash-lite economy, the need for points of cash-in and cash-out should, theoretically, be in decline.



Agents will still be needed for cash, but less often	(59%)
No, agents will always be fundamental to DFS	(29%)
Using agents will be a rare event	(6%)
Agents will not be necessary in the future	(6%)



## RESEARCH FOCUS

# Women make better DFS agents

*New business opportunities are being created for micro-entrepreneurs as DFS agents in Sub-Saharan Africa. Agents are mostly small-scale retailers or service providers, such as convenience stores, tailors or beauty parlors. Although African women often find it difficult to run and grow businesses due to gender bias, our research shows that being a woman is one of the key characteristics of a successful DFS agent.*

In 2016, there were about 1.5 million DFS agents in Sub-Saharan Africa, working for 140 deployments in 39 countries and sharing over \$400 million in total commission income.<sup>6</sup> In the past ten years, the growing DFS industry has offered a new career path for many micro-entrepreneurs on the continent. Some small-scale traders are able to augment their original business revenue by offering additional banking services, while others have become specialized aggregate banking super-agents with their own agents and employees. The agent business is testament to how the emerging DFS market is not only extending financial inclusion, but also contributes to employment and inclusive economic development.

For any DFS provider looking to deploy a digital banking channel dependent on an agent network, it is crucial to understand how the management of digital channels differ from traditional ones. A fundamental part of any agent network management strategy is the agent selection criteria. In many cases, such criteria are based on untested and uncertain assumptions of what characterizes a successful agent. At inception stage, agent selection is often done in an opportunistic way to quickly build a critical mass of agents in selected geographical areas. With the expansion of a network, however, the question of what makes a successful agent invariably comes up as inactive or underperforming agents are a cost to the provider.

To find out what characterizes successful agents, IFC and the Mastercard Foundation ran a research study with microfinance institution FINCA in the Democratic Republic of Congo. At the time of the study, FINCA had about 550 agents deployed primarily in urban and peri-urban areas in the capital Kinshasa and the economically important city of Lubumbashi. The study tested for the importance of business activity, location, branding, effective liquidity management and a range of personal characteristics, including gender and age. The hypothesis at the outset was that older, established merchants, located in high traffic areas, with business that had high turnover and good cash flow management, would turn out to be the most efficient agents.

The analysis was based on datasets that FINCA already had collected from agent application forms, agent monthly monitoring forms, and POS transaction data. The datasets were compiled, cleaned and linked to develop a predictive model of successful agents defined in terms of high number of transactions and volumes transacted. One of the key findings of the analysis was that location is fundamentally important. Transactions were higher in low-income, densely populated areas with high levels of commercial activity, suggesting that the agent network can be best used to support financial inclusion among the urban poor. In addition, visible branding and effective liquidity management were strongly linked to agent activity.

Another key finding of the study was that women are, on average, more successful DFS agents than men. FINCA has been relatively successful in attracting female business owners as agents. At the time of the study, approximately one-third of FINCA agents in Kinshasa were female, whereas only 8 percent of firms in the country generally have female ownership. While women represent over 50 percent of the 67 million population of the DRC, they struggle to achieve parity with the male population in the bid to develop the country. Married women require spousal permission to take up employment, sign a contract, initiate any type of legal proceedings, or to open a bank account.

The study showed that women agents, on average, registered 12 percent more FINCA transactions (cash deposited, withdrawn and transferred) per month than male agents, and generally reported higher values per FINCA transaction. They also had a 16 percent higher net profit on their overall business. However, the activity for women agents was more volatile, whereas men had

### Research question:

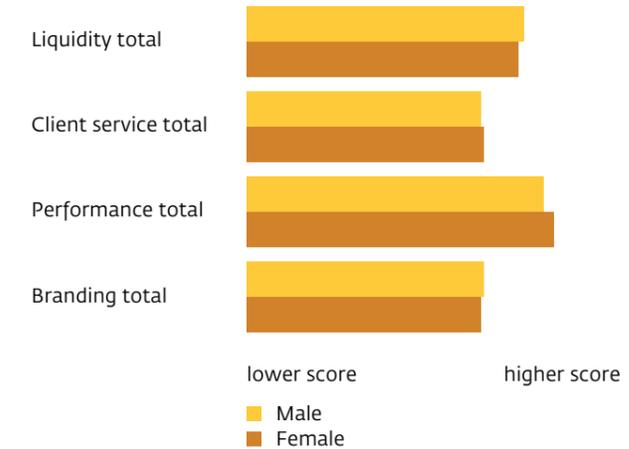
*What characterizes a successful DFS agent?*

**Data collected:** Agent application forms, agent monthly monitoring forms, and monthly POS transaction data from one microfinance institution.

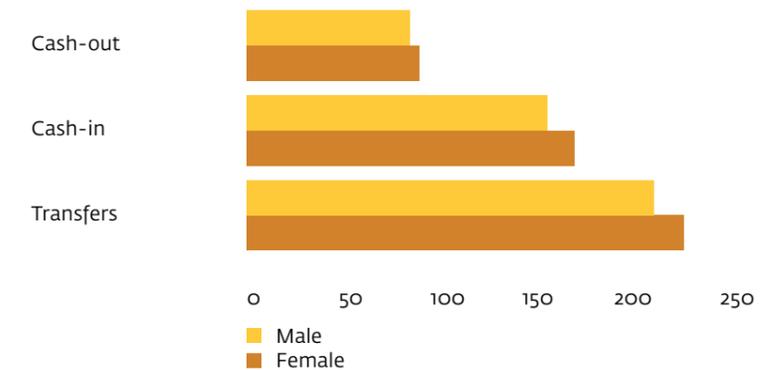
**Methodology:** Regression analysis.

**Primary conclusion:** Women are better agents than men; location is fundamentally important; effective liquidity management is important.

FINCA monthly monitoring scores

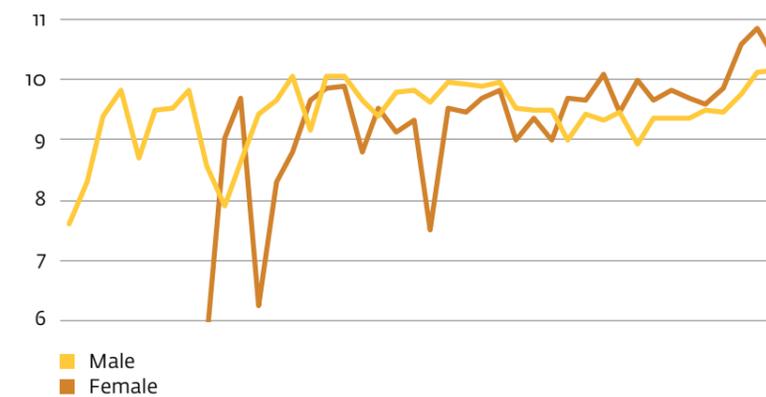


Average volume (CDF) per transaction





Value (CDF) of monthly transactions (ln) over time



on average more consistent volumes of transactions. While more consistent, male agents reached their maximum trading volume quite early after becoming an agent and after that did not seem to increase their FINCA trade much. Women tended to see big drops and increases in the early months as agents, but once they became established they recorded consistently higher volumes.

Looking at the core businesses, 35 percent of female agents operated in the service sector, compared to just 19 percent of male agents. This is important because the study analysis also indicates that agents whose main business falls under services rather than commerce tend to generate, on average, more revenue for FINCA. More data is needed to help understand why service businesses are more successful, but one hypothesis is that service providers are accustomed to being paid for doing something, whether it is hairdressing, mending, or providing agent services; whereas retailers simply accept money in exchange for goods. Thus, the service provider business structure is better aligned to the needs of DFS providers as their original business model is closer to what is required as an agent.

FINCA's female agents were located predominately in disadvantaged areas – less urbanized, lower income, less commercially and financially developed areas. The study found that female agents were 12 percent more likely to be present in low income areas and that 46 percent of female agents, compared to just 30 percent of male agents, were located in municipalities described as being commercially underdeveloped. Male agents were clustered in municipalities with many financial access points and where the main financial alternative was traditional banks. By contrast, 45 percent of female agents were located in municipalities where there were few banks and where at least half of the financial access points were represented by microfinance institutions and mobile money services.

Financial data on daily, non-agent business activity indicated that male agents had, on average, 47 percent higher value sales than female agents, suggesting that men were selling more expensive goods. Account balances of men were almost 20 percent higher, meaning that men saved more money with official financial institutions. However, the net weekly profit of female core businesses was 16 percent higher than that of their male counterparts, and the value of their business inventory was 42 percent higher.

This research is the first published research looking at the differences between men and women as DFS agents, and provides some important insights for financial institutions that need to design or refine their agent selection criteria. In a field where there is still much uncertainty, it takes away some of the biased assumptions underpinning agent selection and provides data-based guidance for agent network deployments. It also is an example of how valuable data analytics can be to the DFS industry, and how it is possible to leverage readily accessible data to make better informed business decisions that can lead to broader and better financial inclusion. Considering that rolling out an agent network is a costly endeavor for any institution, being able to identify who the best potential agents are is an investment worth making.

**Further reading:** *Women Make the Best DFS Agents: How Financial Sector Alternative Delivery Channels Create Business Opportunities for Women in Emerging Markets* by Sven Harten and Anca Bogdana Rusu.

*Agent Banking in a Highly Under-Developed Financial Sector: Evidence from the Democratic Republic of Congo. Policy Research Working Paper No. 7984. World Bank Group, by Robert Cull, Xavier Giné, Sven Harten, and Anca Bogdana Rusu.*



# 4 MERCHANTS

## Digital merchant payments is the next big step

*Small-scale retailers in Sub-Saharan Africa accept almost \$1 trillion in payments from customers per year, the large majority in cash. Digital merchant payments could revolutionize the way even street trade is done, and substantially expand financial sector support for smaller entrepreneurs. So why has adoption of digital merchant payments proved challenging so far?*

It is often said that digitizing merchant payments is difficult because cash is quite convenient for paying the corner grocer or the shoe repair shop down the street. For the many small-scale retailers along the lively urban streets and in the bustling village markets of Sub-Saharan Africa, cash is certainly king. A 2015 study by the World Bank Group for the World Economic Forum showed that micro, small and medium-sized businesses on the continent received \$913 billion in payments from customers in that year, 84 percent of which were in cash. The same businesses made \$610 billion in payments to immediate suppliers, 69 percent in cash.

Digitizing merchant payments could greatly increase the use of digital financial services and help expand financial inclusion further. The fact that there's an informal use of mobile money for merchant payments in many markets, with retail customers making direct transfers to business owners as payments for goods and services, indicate that there is a demand. Our studies also show that there is a high cost of cash management for the merchants, of up to 3 percent.

To explore the viability of merchant payments, IFC partnered with mobile network operator and DFS provider

MTN in Côte d'Ivoire to run a pilot. Côte d'Ivoire is a leading DFS market in francophone West Africa, with 12.8 million registered DFS customers and an activity rate of 38 percent (2016). Financial inclusion has expanded dramatically in latter years, to 41 percent, with the introduction of DFS. While 34 percent of adults have a mobile account, only 15 percent have an account at a financial institution. MTN launched its mobile money offering in October 2009, and is now a licensed Electronic Money Issuer. It offers transfers and bill payments, and is known to have one of the most active and well managed agent networks in the WAEMU region.

The 'MoMo Pay' service was the first contactless solution in Côte d'Ivoire and uses both Near-Field-Communication and USSD technology to allow users to pay digitally for goods and services at linked retailer outlets. It was initially launched at larger outlets such as supermarkets, but is being increasingly expanded to include so-called tier 2 and tier 3 establishments: street restaurants, fruit and vegetable stalls, pharmacies, barbers, and similar. The fact that there's a widespread shortage of currency in small denominations makes Côte d'Ivoire a particularly interesting market for digital merchant payments. MoMo Pay allows users to receive electronic small change also for cash purchases, providing a solution to a persistent problem for both shoppers and retailers, while offering an easy entry-point for the service that does not necessarily exist in other markets.

The one-year pilot project was organized around three key areas: market research, merchant acquisition and activation, and user engagement. The market research mapped the payment flows of street restaurants, called *maquis*, pharmacies and small-scale grocers to better understand the ecosystems of small-scale businesses and the payment bottlenecks they and their clients may face. It revealed how significant a problem the lack of small change is, and identified the 'change back' service of MoMo Pay as possibly the strongest value proposition to retailers and customers alike. The phenomenon forces retailers to source small change from friends and family or even churches, and customers are often forced to accept candy or other small items instead of change.

The market research also identified numerous opportunities to digitize payments along value chains, beyond the immediate merchant-client relationship. It should be possible to digitize not just the payment for a beer in a *maquis*, but payments from the *maquis* owner to the beer wholesaler, and from the wholesaler to the brewery. Cash usage at wholesale level was identified as one of the strongest opportunities for MoMo Pay. Digitization of merchant payments and related value chains could allow DFS providers much deeper engagements with clients, and further increase financial sector support for the small-scale business sector by allowing providers to draw on DFS data to develop and provide, for example, savings, credit, business intelligence, market analytics, marketing and accounting products to users.

For merchant acquisition, the project engaged an agency to launch a pilot to help sensitize small-scale merchants in the Youpougon district of Abidjan. For activation, the team conducted targeted below-the-line activities around those merchants, also supported by two-way SMS communication to increase engagement with tailored messages to individual usage patterns.

West Africa is the new growth market for digital financial services in Sub-Saharan Africa, fast catching up with pioneering economies in East Africa. Côte d'Ivoire is taking a lead in testing innovative solutions in merchant payments, value chain finance, and public sector payments. Whether merchant payments will become digitized on a large scale will ultimately be determined by customers, based on whether DFS offer enough value to them compared to cash. There are the safety and convenience aspects, and there could be reward schemes and tailored marketing benefits to the consumer. For MTN Côte d'Ivoire, the service is expected to build a solid value proposition for keeping cash digital in order to leverage a fully digital ecosystem within its mobile money wallet.

## Merchants are the key to a broader digital ecosystem

**By Lesley Denyes**

*IFC Program Manager, Johannesburg, South Africa*

Unlocking the digital ecosystem for the future of financial inclusion will require heavy investments in merchant networks, as they hold the key to keeping money digital. This takes away the need for cash-in and cash-out, thus reducing fees and agent commissions and creating a better customer experience.

Merchant payments in Africa have largely been unexplored, but several providers are now testing new ways to leverage merchants for the broader DFS offering. To incentivize merchant payments, a good value proposition for the merchant needs to be established. Many merchants are also agents that are paid to cash-in and cash-out people's wallets, so merchant payment activities directly compete with one of their revenue streams. Typically, deployments thus build on offering additional value for merchants. In Egypt, Fawry, a payment service provider, allows merchants to pay distributors and suppliers with the payment facility, providing ease of cash management by using customer purchase accounts to fund supplier payments. Fawry then uses the data to credit score and to provide overdraft facilities to the merchant. Similarly, Kopo Kopo in Kenya offers loans to its merchants based on payment activity, as well as a business management app that allows Kopo Kopo to monitor merchants' payments, float, and revenue performance. It found that 22 percent of merchants transacted more when using the business management tool, and 42 percent transacted more when availing their loan facility.

It's easy to think of merchant payments as retail payments, but the merchant ecosystem is much broader. Digitizing retail payments opens up the possibility to digitize value chains payments of aggregators, suppliers, distributors and producers. The impact is potentially so transformational that regulators are rightfully beginning to pay attention. In the coming years, expect to see traditional banks competing with mobile money offerings, as well as new fintechs that are seeking to gain market share in this area.



## MARKET OVERVIEW

### Côte d’Ivoire: The leading DFS market in West Africa

With a population of 23 million, Côte d’Ivoire has the largest economy in the West Africa Economic and Monetary Union, and is the most advanced DFS market in the region. It has a relatively high GDP per capita (US\$ 3,600) and is the fourth largest exporter in Sub-Saharan Africa. The large agricultural sector employs two-thirds of the work force, and exports include a third of the world’s cocoa production as well as crude oil and petroleum products. Despite this, 28 percent of the population lives below the poverty line.

Only 15 percent of the adult population has an account with a licensed financial institution. Few Ivoirians choose to save at a bank, due to the cost and inconvenience of traveling to a bank, as well as high transaction fees. A further disincentive is the historic failure of several public banks.<sup>1</sup> As a result, most people tend to save at home, although there is increasing evidence of savings in mobile wallets. Lending is mainly informal, from friends and family, and some farmers’ cooperatives extend credit for agricultural inputs or school fees.<sup>2,3</sup>

In this environment, DFS has flourished and continues to grow. The market is dominated by MNO wallets, with Orange Money the market leader, followed by MTN mobile money, and Flooz by Moov (Etisalat) in third place. The main transactions are domestic remittances and bill payments. In addition, there are two OTC (over-the-counter) services offering remittances and bill payments. All secondary school fees and the majority of utility payments are made by DFS. Whilst cash still dominates, DFS are used for around half of domestic remittances. DFS providers are not yet interoperable, but transfers between banks and mobile wallets are increasingly available.

The WAEMU region, with a single currency and regulator, has become a leader in international remittances powered by DFS, with MNOs operating wallets across several markets. This includes interoperability between wallets in different countries, which was the first example of this happening between DFS providers from different parent companies. Côte d’Ivoire, with a high migrant workforce from neighboring countries, is the main source of these remittances, and the corridor to Mali is one of the largest flows in Sub-Saharan Africa.

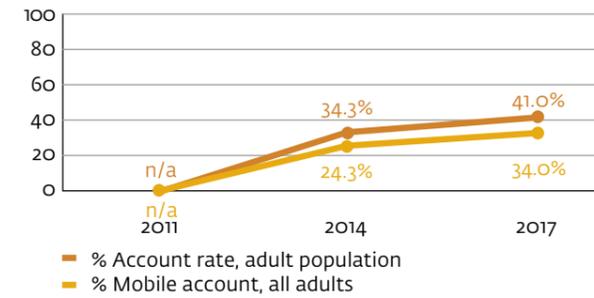
A number of DFS-enabled value-added financial services have been piloted, such as providing digital merchant payments for goods in-store; micro-savings and loans; and digitizing agricultural value chains. However, few have yet reached scale. One exception is Advans, an MFI that has made significant progress in offering digital payments, savings and loans to cocoa farmers, in partnership with MTN.

DFS are expensive in Côte d’Ivoire. A comparison of pricing of 15 services worldwide found that the two main Ivorian providers tied in the position of fourth most expensive at nearly double the price in Kenya.<sup>4</sup> In research amongst inactive DFS subscribers, 15 percent cited high prices as the reason for reverting to cash.<sup>5</sup> The government recently decided to introduce a new 0.5 percent tax on money transactions made through MNOs and their intermediaries, in addition to the VAT already levied. Additional charges of almost US\$ 18 million are anticipated and these fees may be passed on to consumers.

The BCEAO<sup>6</sup> is the single financial regulator in the WAEMU region. Originally, unlicensed DFS providers had to operate in partnership with a bank. A 2015 BCEAO instruction updated these rules, allowing non-financial companies to apply for e-money licenses<sup>7</sup> and the main DFS providers have done so.

Whilst Côte d’Ivoire has a thriving DFS market, there is plenty of room for growth. Studies have reinforced the need to provide a wider ecosystem of transactions to keep funds in the system and reduce cash withdrawals. It still lags behind the more mature markets in East Africa, but this gap could be closed by an industry focus on value-added services relevant to potential users, such as micro-savings and loans for individuals and MSMEs. However, high transaction fees and taxes may prove challenging to innovation and growth.

Overall financial inclusion rate vs mobile money account rate



World Bank, Findex

Any account ownership, adult population, 2017	41%
Any account ownership, women, 2017	36%
Any account ownership, young adults (15-24 years), 2017	34%
Financial institutions account, adults, 2017	15%
Mobile money account, adults, 2017	34%
Saved at a financial institution, adults, 2017	6%
Saved semi-formally, in a savings club or with person outside the family, adults, 2017	21%
Borrowed formally, from an institution or credit card, adults, 2017	3%
Borrowed from friends and family, adults, 2017	25%
Poverty rate, 2015	27.9%

GSMA

Unique mobile network subscribers, 2017	12.5 m
Mobile penetration rate, 2017	53%

BCEAO, AFSD

Volume of MM transactions, 2016	278,545,141
Value of MM transactions, 2016	8,996 m US\$
Registered mobile money users (wallets), 2016	12,845,970
Number of agents, 2016	40,149
Licensed banks, 2015	26
Bank branches, 2015	605
Total assets, 2015	8,824.13 m US\$

Mix Market

Licensed MFIs	32
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### Industry opinion:

*Who should pay to incentivize adoption of merchant payments?*

Retail payments are almost entirely cash-based in most emerging markets. The adoption of DFS by merchants can have significant impact on the economy and financial inclusion, but bears adoption costs and risks for merchants who want to provide digital retail payments.



Providers	(62%)
Merchants	(25%)
Customers	(13%)



## RESEARCH FOCUS

# Are interoperable DFS merchant payments the future?

*The ability for customers to pay electronically for goods and services at retail outlets is a cornerstone of the modern economy. With widespread usage of DFS accounts in Sub-Saharan Africa, market actors are increasingly exploring how to enable merchant payments through mobile money. An IFC study looked at how ready Tanzania is for interoperable digital merchant payments.*

As DFS markets in Sub-Saharan Africa mature, two issues are garnering increasing interest from the industry and other stakeholders: merchant payments and interoperability. Neither one has so far reached wide adoption on the continent. A variety of providers have pioneered merchant payment models in several markets, but all have yet to reach scale. In 2014, Tanzania became one of the first DFS markets globally to establish an industry-led scheme for DFS interoperability (read more on page 174), so that today Tanzanian mobile money users can transact with each other across providers for person-to-person payments. Could interoperable DFS merchant payments be the next step for Tanzania?

To find out, IFC and the Bill and Melinda Gates Foundation commissioned a research study in 2016 to look at three key areas: 1. The potential market size in Tanzania for DFS merchant payments, 2. Possible models for merchant payments and pricing considerations, and 3. Technology considerations from a user perspective. The study involved interviews with 700 small businesses in six cities in Tanzania, covering urban and peri-urban areas, as well as 18 focus group discussions with customers and small businesses, and eight product design ‘sprints’ using human-centered design methodology. Interviews were also conducted with each mobile operator at the beginning and towards the end of the research project.

To begin with, the research sought to size the potential mobile money merchant market and determine the motivation for becoming a mobile money merchant. There are no official statistics on the number of small business retailers in Tanzania. However, secondary research data pulled from various sources and supported by study interviews indicate an estimate of between 350,000 and 500,000 in the country. According to interviews with mobile operators, as of November 2015 there were roughly 60,000 mobile money merchants, of which 25,000 were considered active. There were also about 87,000 mobile money agents, roughly half mobile agents only, and the other half selling other goods and services as well. There appeared to be little overlap between mobile money agents and mobile money merchants. Of the sample surveyed for the study, businesses mainly sold goods (45 percent) rather than services (21 percent), although 33 percent said they sold both.

A large majority of respondents of the study survey (625 of total) were currently not offering merchant payments and were thus considered prospective mobile money merchants. Of this number, 262 initially indicated they would be interested in providing mobile merchant payments services. When asked why, two-thirds indicated that not losing sales would be the primary motivation. Similarly, small business participants in the focus groups were generally positive about the merchant proposition – especially once they had the opportunity to evaluate and interact with simple prototypes of smartphone terminals that also offered basic business features such as inventory management. Among existing mobile money merchants, the main reason cited for initial adoption of merchant payments was to ensure they didn’t miss out on sales from customers without adequate cash (70%). The second cited reason was the promise that customers spend more on average in their store (26%). According to this data, as well as data from prospective merchants, retaining and growing customer sales are the most important considerations for accepting mobile money merchant payments.

Secondly, the study looked at pricing dynamics. Pricing is arguably one of the most complex topics for any new product or service. This is especially so when the service platform effectively creates a two-sided market, i.e. both sides depend on each other for the service to be successful. With merchant payments, the question is always who

### Research question:

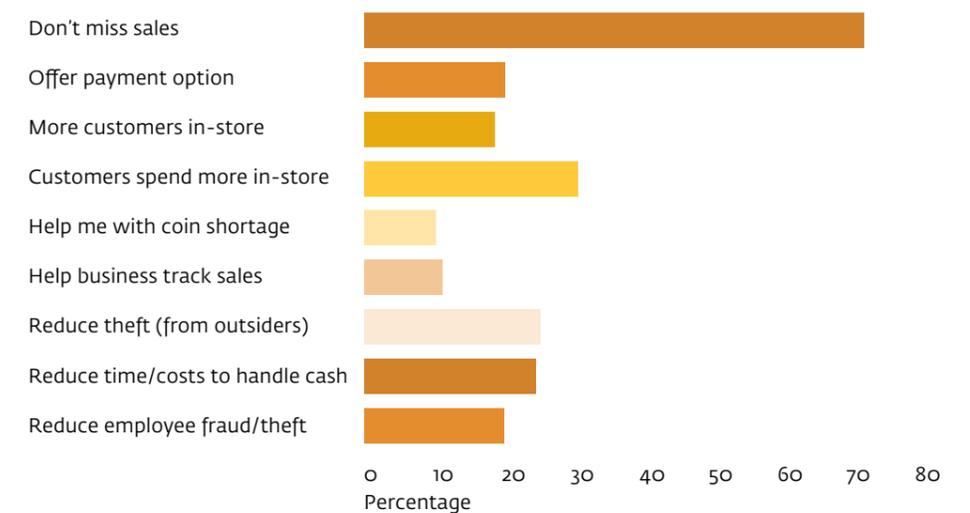
*Are retail outlets in Tanzania ready to adopt digital merchant payments? Would an interoperable model work?*

**Data collected:** A survey with 700 businesses in six cities in Tanzania; 18 focus group discussions; eight product design sprints; interviews with all mobile money operators.

**Methodology:** Quantitative, qualitative and Human Centered Design (HCD).

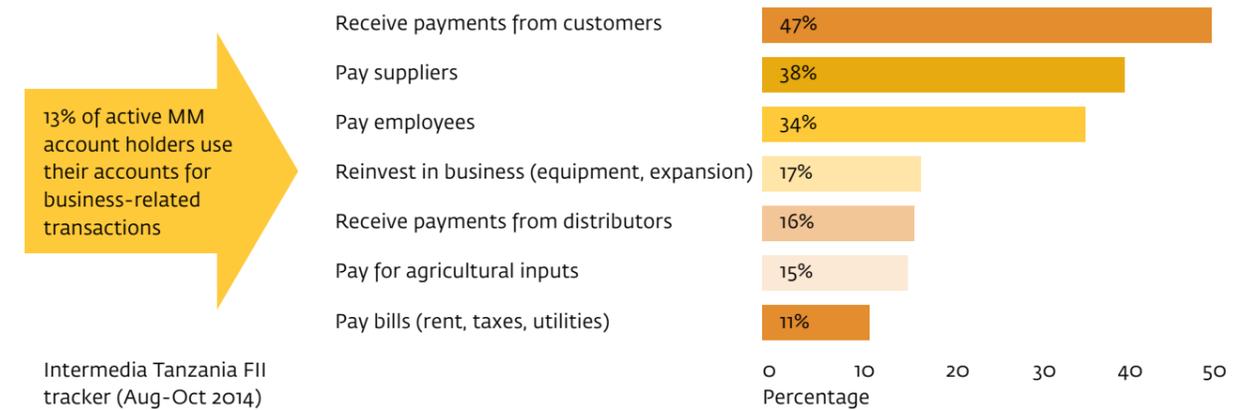
**Primary conclusion:** There is a compelling user need for merchant payments, and interoperability among operators would be beneficial.

Expectation of how accepting merchant payments would help business





Business-related transactions via mobile money (MM) account  
(Percentage of active MM account holders who use accounts to make payments)



should fund the service – merchants or customers? The study found that small businesses were indeed willing to pay a fee to accept such payments. In focus groups, by far the largest cited benefit of accepting mobile merchant payments was to reduce cash-handling, mainly due to the risk of robbery, employee theft and fraud. Some thought customers should also pay a fee, as customers too benefit from the service. In the survey, almost 90 percent of small businesses that were not yet accepting mobile money merchant payments indicated that they would be willing to pay some amount to accept such payments.

However, for customers, it became clear their current experience of paying in cash is not all that ‘painful’. Broadly speaking, customers did not report their current method of paying small businesses in cash as an inconvenient process. In some instances, it was seen as a hassle (when change was an issue) or undesirable (for fear of theft of large amounts of cash), but generally not viewed as a major pain point. In practice, mobile money users are already paying for goods and services with mobile money by making direct P2P payments to merchants. According to a survey by Intermedia in 2014, 13 percent of all active mobile money account holders in Tanzania were being used for business-related transactions. If merchant payments are to achieve scale, there would ideally be a distinction between P2P transfers and P2B payments for goods and services, as they are fundamentally different value propositions and should be priced accordingly. Currently, a major problem for customers making payments via P2P transfer is that the recipient/merchant insists that the customer/buyer pays

not only the sending fee, but also the withdrawal fee to compensate the recipient.

Finally, the study looked at technology from a customer experience perspective. In the current customer experience with mobile money in Tanzania, it is the customer, not the merchant, who initiates the transaction; both parties receive a confirmation message via SMS. This flow should be retained, as well as the user interface for virtual payments (e.g. bill payments), based on customer feedback. Customers complained about the number of steps required to complete a USSD transaction and the reliability of the network. While other solutions such as Near Field Communication technology are being explored, the customer experience is still a bit unsatisfactory and adoption has been low. It might be worth looking at ways to simplify and improve the customer experience on the USSD channel, which customers are already used to.

Overall, the study indicates that there is a compelling user need for merchant payments and that its interoperability among mobile operators should, and will, eventually occur. The mobile financial services industry in Tanzania should consider an interoperable mobile money merchant network, that provides a seamless customer and merchant experience, builds on existing technology, and takes into consideration market forces and individual provider preferences.

**Further reading:** *User Insights In Enabling Interoperable Mobile Money Merchant Payments in Tanzania*, by Amitabh Saxena.

# Mobile money to replace pocket change in Abidjan's shops

*Daniel, a MTN MoMo Pay activator, prospecting for clients in Abidjan, Côte d'Ivoire, on 7 December 2017.*

*Despite the recent revolution in mobile money in Sub-Saharan Africa, trade is still mostly done in cash. In Côte d'Ivoire, MTN is trying out a digital merchant payments service that could potentially help solve a cumbersome day-to-day problem for many Ivorians: a lack of small change.*

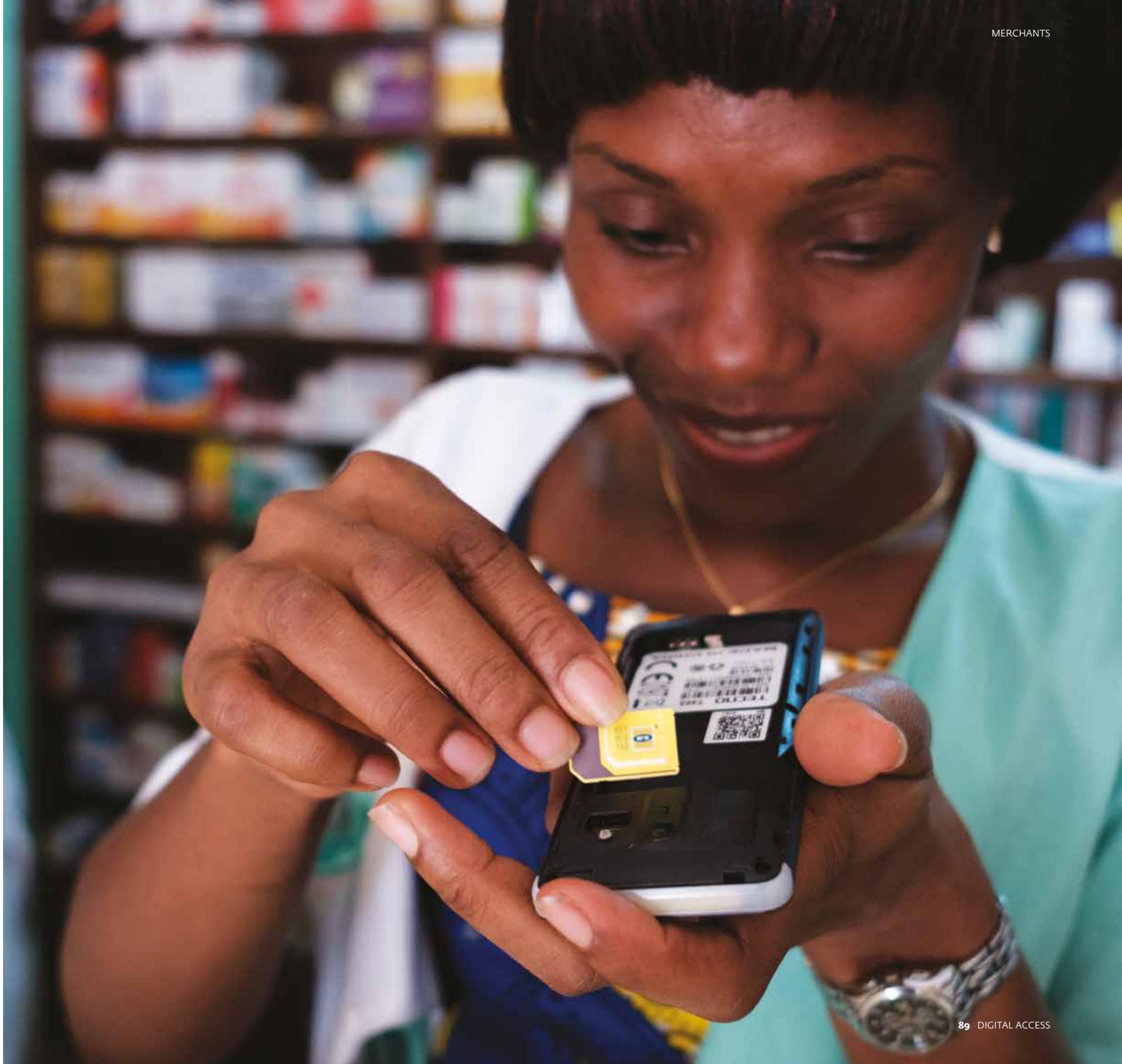
**Abidjan, Côte d'Ivoire.**

Daniel squares his shoulders and walks up a flight of stairs into a glass-fronted office. Looking down onto the busy car wash and mechanic shop floor below, he spells out visions of the future of mobile money to the car wash manager. Uniformed in a yellow t-shirt and an easy smile, Daniel is known as a 'promoteur MoMo' by MTN, his employer and the second largest mobile network operator in Côte d'Ivoire. He is part of a small group of representatives piloting a product aimed at revolutionizing retail business transactions. It is called MoMo Pay; a cashless merchant payment solution that allows MTN customers to pay for goods and services using both near-field communication and USSD technology.

But in a nation where 62 percent of adults remain unbanked and there is a strong cultural bias for cash, Daniel faces a lot of pushback. In a typical morning's work, he gets told: "Sir, I disagree with your project."  
"Well, this service is too complicated."  
"Alright, this is fine, but I'm not ready yet. Not quite ready."

MTN's aim is to start building a digital merchant payment system among retail outlets across the country, including small and informal merchants. It is the second step in a process begun near the end of 2016, when MoMo Pay was first piloted with large and mid-size supermarkets such as Carrefour and Hayat. Now, Daniel and his colleagues are canvassing restaurants, outdoor bistros known as *maquis*, hardware stores, hair salons, car washes, gas stations and beauty parlors, to adopt a simple point-of-sale device, an extra MTN SIM card, and an MTN-branded MoMo Pay poster in their front windows.

*A staff member inserting a new MTN SIM card into a mobile phone at Pharmacie Koute in Abidjan, Côte d'Ivoire, on 5 December 2017. The pharmacy had recently signed up to use MoMo Pay.*

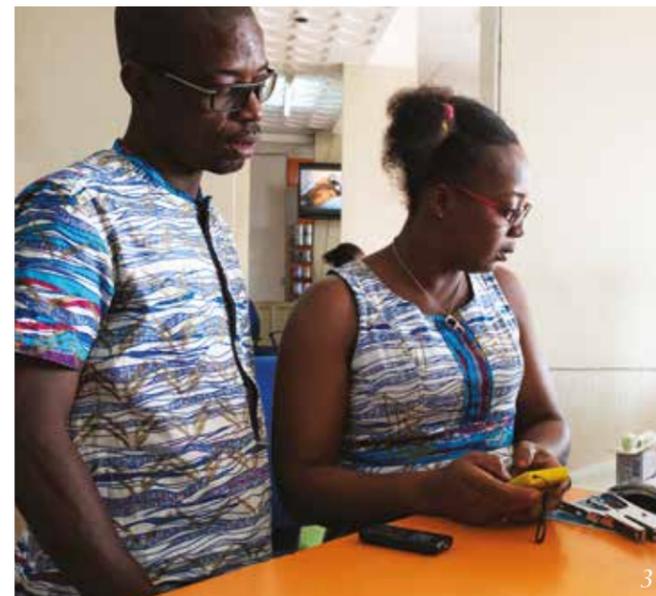




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Merchant networks are the mark of a mature mobile payment market. From that perspective, Côte d'Ivoire is probably the best-placed country in West Africa to attempt this. There are more than 27 million mobile subscribers in Côte d'Ivoire, representing a mobile penetration rate of 105 percent. It is also the largest mobile money market in West Africa, with over 12 million registered clients, according to December 2016 data of the regional regulator. About 30 percent of MTN's active voice customers (on a 90-day basis) use mobile money, or 'MoMo' as people call it here. An unquantified amount of 'merchant payments' are already taking place, with customers paying small store owners directly, using P2P transfers into their personal mobile wallets.

In addition, MoMo Pay is strongly placed to address a very poignant need in the country: there is not enough currency in small denominations to meet the demand for small change. Next to almost every cashier in Abidjan stands a jar of candy. This is not due to a nationwide predilection for sweet things, but because coin-strapped stores offer customers bonbons in lieu of change. A secondary market has sprung up in the wake of the shortage. Gas stations, churches with donation plates, and "people with well-connected friends", said the people interviewed, have begun to sell change to stores that need it. They sell it at a premium of anywhere between 3 percent and 8 percent.

At a busy pharmacy in the bustling neighbourhood Yopougon, deputy manager Yao says: "Some people come themselves here to sell change. I don't ask where it comes from, I just buy it." He estimates that the store spends about \$200 a month buying coins. During a busy period, he remembers purchasing \$1,300 worth of change in one day. Prices in the pharmacy often require awkward amounts of change: a box of painkillers, for example, costs 2,570 francs. Prices are set by the wholesalers and can't by law be altered by the store.

"Some people come and realize that we don't have change, and leave. This is a wasted opportunity," says Yao. He is excited at having a cashless channel to refund clients. "It will avoid many arguments." In addition, he anticipates that it will save the cost of buying coins.

1. An MTN mobile money subscriber providing an electronic signature while having her identity verified through a mobile device.
2. Diane, a MoMo Pay activator, explaining how the service works to Keletchan Coulibaly as he has his lunch at a maquis in Abidjan.
3. Pharmacy staff with their new point-of-sale device at Pharmacie Wakouboué.
4. A car wash and tune-up garage in Abidjan that has signed up to use MoMo Pay.



Despite this strong value proposition, MTN is treading into uncertain territory with this pilot. Although there have been attempts to launch merchant payments solutions in several African markets to date, most have not yet reached ubiquitous acceptance and usage of merchant payment products. Most merchants in Côte d'Ivoire operate in an ecosystem that is ruled by cash: they receive mostly cash, pay their suppliers in cash and their staff's salaries in cash.

"It is not easy," says the manager of the pilot at MTN Côte d'Ivoire. "For this woman selling tomatoes in the market, if you tell her that instead of getting your cash now, you can accept mobile money in payment, she will say that you are a fool."

Against this backdrop, the 'MoMo promoteur' Daniel is working hard to reach his recruitment targets. For now, MTN is providing the point of sale device, training and set up for free. The merchant's only 'investment' required is to provide a cell phone with which to use the MoMo Pay SIM card. In Yopougon, Daniel has found a keen client. Leaning against some plumbing tubes at the door of his hardware store, owner Gervais tells how he has already done \$500 worth of business using MoMo Pay in just three days. Previously, "people would ask if they can pay with mobile money, and I said I didn't have," Gervais explains.

Financial literacy is a challenge, especially when aiming to include street traders and small-scale merchants. "The most important thing is not to recruit thousands of merchants, but to have a few that remain active. For that, I need to ensure that my promoteurs are educating. Seventy-five percent of their time is spent getting the merchants to use the system," says the MTN manager. It appears the training investment is paying off. Cashier Assata was coached at the Saguidiba supermarket in Yopougon three months ago. The store manager estimates that they now make about 20 mobile money transactions per day, roughly half of which are MoMo Pay customers.

*Diane (left), a MoMo Pay activator, teaching Eugenie Bron Kouadio to use her new point-of-sale device at her maquis.*

Police officer Kakou walks past the rows of chewing gum lined up next to Doumbia's till and makes a small purchase that requires about 2 US cents change. Instead of offering him a sweet, Doumbia deposits his change into his MTN mobile money wallet.

"I was pleasantly surprised," says Kakou afterwards. "I just opened this account and I already received money on it." This is the kind of event that MTN wants more of. "We need merchants to perform transactions, and we need customers to have a good experience," says the MTN manager.

A few minutes later, burly air force personnel Alain hurries to the till with five litres of water and a packet of chocolates. Near the MoMo Pay POS device, Alain waves his phone, which houses a yellow NFC sticker. Using NFC offers the customer a contactless experience and almost no phone manipulation, but requires quite an investment for MTN.

Koffi discovered MoMo Pay a year ago, "indeed, in this supermarket," he says. He uses it frequently because "it's an easy payment method," and because he gets his money for change instead of candy. "They give you sweets and it's not what you wanted," he says.

In addition to merchant payment facilities, MTN has recently launched MoMo Kash, a digital loans and savings product that will further support the journey towards full financial inclusion. MoMo Kash is available to all MTN mobile money users. It allows them to save easily, earn daily interest on even the smallest deposits, and qualify for small loans based on credit scores drawn from their mobile money and airtime usage. The combination of MoMo Kash and MoMo Pay give a feel for the direction in which DFS services in West Africa could move.

At the end of the day, Daniel is exhausted but happy. "Most of what we do in Côte d'Ivoire and in Africa is oriented towards technology," he says. "I like doing this job because it fits into my views of the future."

*Edwige posing for photos with MTN staff after she won a call credit voucher for CFA 5000 (\$9.00) at a MoMo Pay promotional event at O'Baoulé, a popular nightclub in Abidjan.*





**Gervais , hardware store owner:**

“ Back in the day, no-one was using mobile money. But now, I think about 60 percent of the population is using it. So a cashless society will come one day. ”



**Yao, pharmacist:**

*“I would be willing to pay a fee for MoMo Pay. It is more secure and more convenient for us.”*



**Eugenie, maquis owner:**

*“For me, it’s a bit complicated, but I expect that with time, with more transactions, I will know how to use it.”*



**Ali, car wash owner:**

*“There are lots of advantages to mobile money. I will use it to pay the washers [my employees]. I already use it to pay for my electricity and water bills.”*



**Assata, supermarket cashier:**

*“The client knows it’s a real advantage.”*

*Gervais, owner of Quincaillerie Chez Gueu, a hardware store in Abidjan, says the MoMo Pay service increases business.*

5

# MARKET RESEARCH

## Focusing on the people you serve

*Agent networks make it possible for financial services providers to offer their services with much greater geographical and socio-economic reach than before, having a ground-breaking impact on financial inclusion. Many new users have gained access to formal financial services for the first time, and understanding how the new services meet their needs is key to successful DFS implementations.*

DFS agents are becoming an established feature of urban and village life in Sub-Saharan Africa. Across the continent, there are hundreds of thousands of banking agent kiosks – often clearly marketing their services in the bright colors of the service providers. Agents are the face of the providers to a new set of customers, many of whom have never put a foot inside a bank branch before. Whether providers choose to establish a proprietary agent network or outsource it to a partner, the relationship between agents and customers is crucial to realize the promise of DFS for financial inclusion.

Established in 2007 as one of the first limited liability microfinance institutions in Senegal, Baobab Senegal (formerly Microcred) offers financial services to over 300,000 clients, many of whom were historically excluded from the formal financial sector. By offering innovative savings products and cash-flow-based loans to small-scale entrepreneurs, Baobab Senegal has a two-fold mission: to improve the standard of living of its clients and their households, and to be a catalyst for economic development in the country. In ten years, Baobab has become the second largest MFI in Senegal in terms of gross loan portfolio and it is a pioneer of DFS and partnerships to distribute pay-as-you-go solar power solutions.



In 2015, Baobab launched DFS and created an agent network to expand its business beyond its urban, branch-centric core to reach a larger, more varied customer base than before. It was assumed that the agent network would allow the MFI to increase and deepen outreach to both existing clients and new clients further away from branches. Agents are local retailers who double as lower-cost alternatives to bank branches and enable customers to more conveniently make deposits, withdrawals, transfers to other Baobab clients, and loan repayments. From the start, Baobab based its DFS strategy and products on a human-centered design methodology, relying on clients' feedback through focus groups to test ideas in an iterative process.

As part of its effort to deepen its understanding of the market, Baobab wanted to learn about the experience its clients had using the agents vis-à-vis transacting at a branch. Accessing the service can vary from the two different types of outlets in terms of transaction costs, restrictions on use of the account, as well as social interaction. How do these factors affect the attractiveness of agent banking to clients? Are customers as happy visiting an agent as they are visiting a branch? If living within equal distance from an agent and a branch, would clients prefer one over the other?

To find out, Baobab and IFC's Partnership team launched a randomized control study in collaboration with a research team at the World Bank. Randomized control trials (RCTs) are the gold standard of evaluation methods, used to rigorously test the effect of an intervention by ensuring that no variables other than the intervention may count for an

effect. An RCT allows one to identify causal effects as well as to draw statistically significant conclusions.

In the context of promoting financial inclusion, especially for new customers and the unbanked, the experience of first contact with the formal financial system is important. If potential new customers have a negative experience or don't see the need or value of a new product or delivery channel, they may never try it again. It is therefore important to rigorously test the value proposition of new financial services and among new customers to identify any need for operational adjustments right from the outset. Since agent banking is new in Senegal and West Africa, Baobab Senegal and IFC sought to rigorously test the value proposition of agent banking to its new customers with the help of an RCT.

In a setting where existing and potential microfinance clients lived at equal distance from agents and branches, a random group of individuals was given information about a savings account. Distance could therefore be ruled out as a driving factor for potential customers to prefer agents over branches. Half of the individuals were encouraged to apply to open an account at the nearest agent, while the other half were directed to the nearest branch. The research team then tracked the respondent's financial behavior over time, relying on transaction data and supplementary market surveys to analyze the response.

Results show that individuals initially encouraged to bank with an agent had higher rates of account opening and made more transactions overall, as well as saved more compared to those encouraged to bank with branches. They became more financially included and better clients for the institution. The customers that used agents did not only use agents, but took advantage of the branch teller services as well, particularly for larger transactions. They also reported having more trust in the institution and being overall happier with the service.

The RCT research with Baobab Senegal was complemented by additional analysis of transaction data from existing microfinance clients, comparing their transaction behavior before and after their first use of agent services. Results are very encouraging. After using an agent for the first time, customers significantly increased both the average frequency and volume of transactions per month.

The study showed that agent banking provides extra value to new as well as existing microfinance customers, reflected in more active usage of financial services. As this also makes them better customers for the institutions they bank with, agent banking appears to offer a win-win solution for DFS providers and customers alike. The study also demonstrates that a combination of a rigorous RCT, a detailed analysis of transaction records, and more qualitative interviews about the perception and trust of using financial services, can together build a full picture of customer behavior and offer insights into what drives greater activity rates, improved customer satisfaction and deeper financial inclusion.

## No single dataset will tell you the market

**By Sinja Buri**

*IFC Operations Analyst, Dakar, Senegal*

Market research is an essential tool to any business. It can be any organized effort to collect and analyze data to better understand your customer and your market. It is particularly important to DFS providers in emerging markets, as there's very little established data on the new set of target users – people previously excluded from formal financial services. Low income people, micro-entrepreneurs and rural populations are predominantly active in the informal economy.

There is no one best method or approach to market research, as there are advantages and disadvantages to any. Rigorous research methods such as randomized control trials may measure the quantifiable size of a phenomenon, but not much understanding as to why it exists. Focus group discussions often provide plenty of anecdotal evidence to better understand the motivations of DFS users, but will rarely help to quantify a trend. We've found that combining different research methods allows you to come to more comprehensive conclusions and answer questions in a way one method alone could not have done.

In the Democratic Republic of Congo, for example, we developed a model identifying factors determining what makes a successful DFS agent. The empirical model shows that trust in an agent is positively associated with higher transaction numbers and volume. Our Ethnographic Study, implemented in DRC and three other African countries, also revealed the key importance of trust. Interviews with Congolese DFS users showed that DFS is generally appreciated because it is perceived to be different from the traditional banking sector, which has collapsed several times.

By its very nature, DFS also generates large sets of data on consumer behavior that did not previously exist. Big Data analytics, in combination with traditional research approaches, introduces exciting new ways to get to know the African DFS user.



# MARKET OVERVIEW

## Senegal: Remittances take center stage

Senegal has a population of 15.1 million, and more than half (56 percent) live in urban areas. Unemployment is high and the majority of jobs are in the agricultural sector, which employs over three-quarters of adults and contributes 17 percent of GDP. The youth population is large and growing, with more than 60 percent under 25 years old. Over a third of the population lives below the poverty line.

Formal financial inclusion is very low at 15 percent, and most banks are cautious about extending their reach via DFS. Société Générale de Banques au Sénégal is one of the few commercial banks to enter this market via its subsidiary, Manko, which has the legal status of 'intermediary in banking operations'. Being an IBO, Manko can compete directly with microfinance institutions, offering loans with lower interest rates. The SGBS mobile wallet, Yoban'tel, can be used for Manko banking services such as savings and loans, as well as typical wallet transactions such as P2P transfers and bill payments. There is a network of SGBS agents and bank branches for cash in/out.<sup>1</sup> By the end of 2015 Manko had 4,300 clients, mainly small business users. Ecobank has also been active, launching a mobile banking app that uses Masterpass QR codes for merchant payments, though no results are yet available for this initiative.<sup>2</sup>

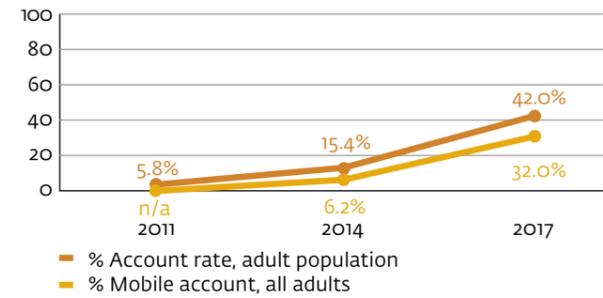
The MFI Baobab (formerly Microcred) offers a DFS service called Baobab in Senegal and elsewhere, which is so successful that the company has recently rebranded as Baobab. An agent network was used to extend the MFI's reach, and agents were equipped with user-friendly technology including biometric identity verification. New services have been added to meet the needs of their target unbanked clients. By mid-2016 17,500 clients were performing 2.4 transactions every month through 33 Baobab agents.<sup>3</sup>

For several years Senegal has had successful local over-the-counter [OTC] services that are widely used to send money and to pay bills. The two main services are both locally owned and operated. The largest is Wari, offered by Cellular System International, and was the first to be launched in 2008 as a low cost alternative to Western Union for domestic remittances. By mid-2016 Wari was processing 65,000 transactions per day in Senegal, and had launched similar services in several other African markets. Joni Joni, from Bouyges Solutions Systems, was launched in 2013 as a direct competitor, followed by Nafa from Money Express. Transaction data is not available for these services, but as most DFS agents are non-exclusive, agent uptake gives a guide to service popularity. Wari is offered in 82 percent of agents and Joni Joni in 54 percent.<sup>4</sup> By comparison, the MNO Orange Money service is offered in 40 percent of agents. A constraint for OTC services is that the customers do not have an account where money can be held and self-service transactions performed. For these reasons, despite the service they offer to the unbanked, OTC services are generally not included in financial inclusion statistics. Wari now offers a wallet in partnership with UBA bank, which is based upon a prepaid card and can be accessed via a mobile phone app. International remittances are also processed through the Wari system, in partnership with MasterCard and a number of money transfer organizations.

There are 3 MNOs in Senegal: Orange, Tigo and Expresso, (plus Kirene MVNO using the Orange network). Orange and Tigo both offer DFS and both have EMI licenses to operate directly. These services offer basic wallet services such as P2P transfers and bill payments, but they have not yet reached the scale of the local OTC services. An interesting development is that Millicom, the Tigo parent company, has decided to sell its Senegalese operation. Millicom originally accepted an offer from Wari, but later withdrew from the arrangement and has made a deal with a financial consortium. It is reported that Wari is suing Millicom as a result.<sup>5</sup>

The regulatory environment in Senegal is generally supportive of the development of DFS. BCEAO, the regional regulator for the WAEMU region, allows licensed organisations to operate as e-money issuers, but they must partner with financial institutions to offer savings and loans. Banks do not need an EMI license.

Overall financial inclusion rate vs mobile money account rate



World Bank, Findex

Any account ownership, adult population, 2017	42%
Any account ownership, women, 2017	38%
Any account ownership, young adults (15-24 years), 2017	34%
Financial institutions account, adults, 2017	20%
Mobile money account, adults, 2017	32%
Saved at a financial institution, adults, 2017	7%
Saved semi-formally, in a savings club or with person outside the family, adults, 2017	24%
Borrowed formally, from an institution or credit card, adults, 2017	8%
Borrowed from friends and family, adults, 2017	30%
Poverty rate, 2011	38%

GSMA

Unique mobile network subscribers, 2017	8.4 m
Mobile penetration rate, 2017	53%

BCEAO, AFSD

Volume of MM transactions, 2016	72,673,296
Value of MM transactions, 2016	1,044 m US\$
Registered mobile money users (wallets), 2016	4,408,487
Number of agents, 2016	39,172
Licensed commercial banks, 2015	25
Bank branches, 2015	368
Assets	9,113.26 m US\$

Mix Market

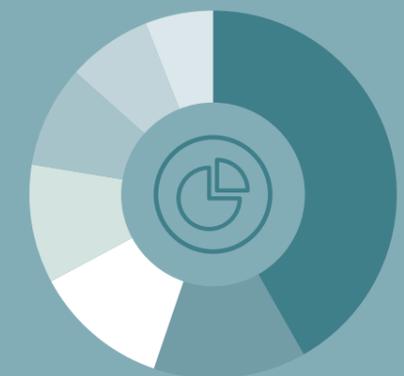
Licensed MFIs	82
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## Industry opinion:

*In what area have you employed market research to change the way you do business?*

DFS market research can provide the answer to essential questions on market shares, competitor landscape, available products and services, best practice, opportunities and challenges, and key insights on (potential) consumers. With continuously advancing methodologies and access to data, providers rely on market intelligence to improve and adapt the way they do business.



Product development	(42%)
Technology adaptations	(13%)
Channel design	(12%)
Customer segmentation	(10%)
Pricing	(9%)
Marketing messages	(8%)
Targeting	(6%)



## RESEARCH FOCUS

# The mobile money customer that isn't

*Registered digital financial services customers far outnumber active users in all DFS markets in Sub-Saharan Africa, even with the most generous definitions of activity. This means the services on offer aren't being that widely used. Why is this the case? Is it a matter of pricing? Could it be product design? Does it have to do with concerns around security? Or is it an issue of customer care?*

To investigate the causes of inactivity and learn how they can be addressed, The Partnership for Financial Inclusion carried out market research in Côte d'Ivoire in 2014, in cooperation with two of the largest DFS providers in the market. The study found three main barriers to usage: services lacked relevance, potential customers did not see the benefits of using DFS over cash and traditional financial services, or services on offer were too expensive.

By the end of 2014, the five digital financial services providers in Côte d'Ivoire had together registered over 9 million mobile money accounts. In the same year, Ivorians deposited over FCFA 1.15 trillion, equivalent to \$2.4 billion, into mobile money accounts, which was over 70 percent of the value deposited in the West Africa region. Despite these promising developments, almost 50 percent of all mobile money accounts in Côte d'Ivoire were inactive, meaning customers had not performed a financial transaction in the past 90 days. This was not unique to the Ivorian market. According to the GSMA, only 34 percent of the 299 million registered mobile money accounts worldwide in 2014 were 90-day active, although activity levels had increased from the previous year. The GSMA also estimated that, across Sub-Saharan Africa, activity levels were higher than in other regions, with 61.9 million of the 146 million registered DFS customers being active, or 42 percent. Various sources of activity data as a percentage of the adult population, rather than as a percentage of registered customers, show big variations across Sub-Saharan Africa (see infographic).

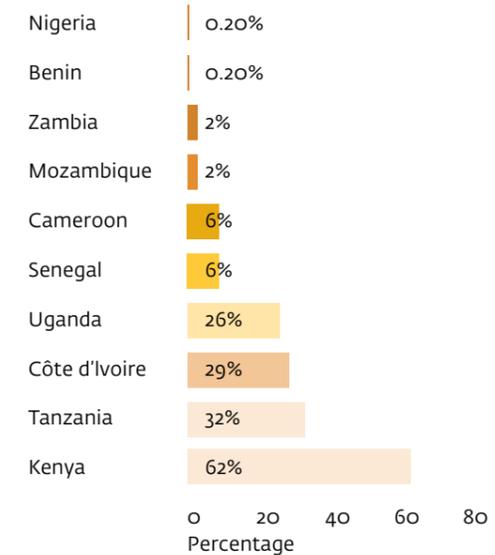
The activity level in Côte d'Ivoire measured as a percentage of the adult population was in fact above the average on the continent, but still left much room for improvement.

The study asked a sample of one thousand mobile money customers from two leading service providers in Côte d'Ivoire why they did not regularly use their registered mobile money accounts. The three main reasons for inactivity cited by respondents were: irregular income, no need for a mobile money account, and the service being too expensive. Some secondary reasons were also raised by up to 10 percent of the research respondents, such as a lack of conveniently located agents, difficulty using the services, and lost PIN codes. In order to better understand the three main reasons for inactivity, the research team constructed a model to profile the respondents citing these reasons for not regularly using the service, controlling for socio-demographic variables such as age, gender, and household income.

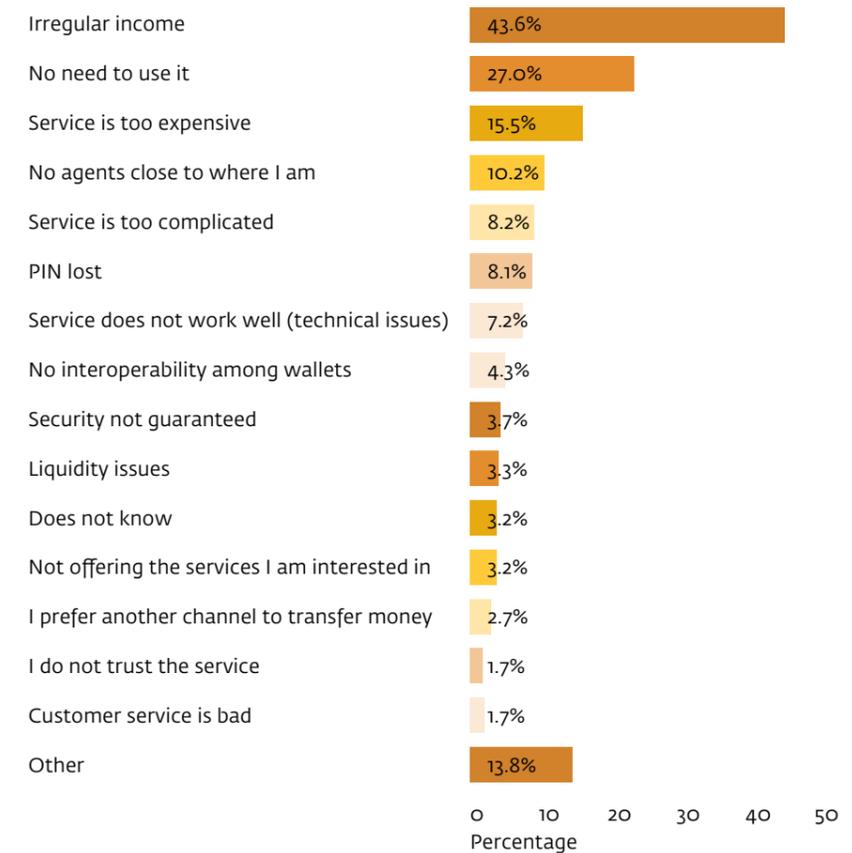
Irregular income was the main reason given for inactivity, cited by 43.6 percent of respondents. Customers on irregular incomes do not consider themselves to have spare money to keep in their mobile money accounts, suggesting that they do not see mobile accounts as a convenient means of serving their everyday payment needs. It is unclear whether this implies that mobile money accounts are indeed unnecessary for this customer group, or if it is rather due to a lack of understanding of the benefits of digital financial services. The research survey made a distinction between unused mobile money accounts that have been registered but never used, and dormant accounts that have previously been used but are currently inactive. There appeared to be a number of irregular users who only used their accounts occasionally, when they had been sent money or had earned money and thus had funds. People who only use their mobile money accounts to receive funds, students, and people from poor households, are more likely to be among this customer group, while people who have at least some secondary education are 40 percent less likely to report lack of funds as a reason for inactivity.

The second reason respondents gave for inactivity was that they had no need for a mobile money account. This suggests that DFS does not appear as a compelling alternative to cash or other forms of financial services. This could partly be due to relatively low awareness of the benefits of DFS among customers, and partly because mobile money accounts at the time could only be used for a limited range of payments in Côte d'Ivoire. Another reason may be the use of multiple mobile money accounts. A common phenomenon in Sub-Saharan Africa is that customers hold multiple cellphones

Activity levels of mobile money accounts in other markets. (Active mobile money users/adult population)



Main reasons for inactivity among respondents



### Research question:

*Why are registered mobile money customers not using the service?*

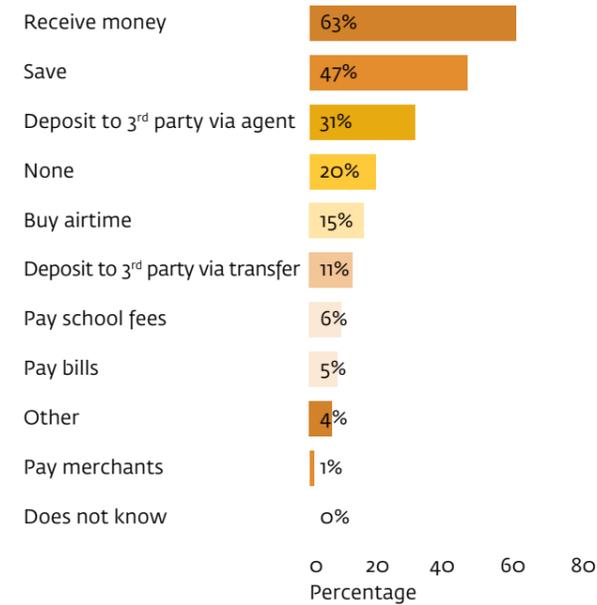
**Data collected:** Data on 700,000 randomly selected DFS customer accounts in Côte d'Ivoire; face-to-face interviews with 50 inactive DFS users; phone-based interviews with a random sample of 1,000 DFS users; mystery shopping trips to 40 DFS agent outlets; eight focus groups with inactive DFS customers. Fieldwork split between Abidjan, San Pedro and Bouake regions.

**Methodology:** Binary logic regression using four different dependent variables, plus qualitative information from interviews and focus groups.

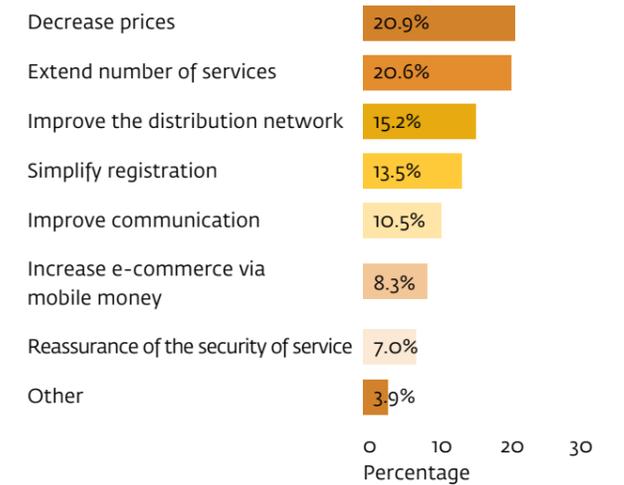
**Primary conclusion:** The three main reasons for inactivity cited were: irregular income, no need for a mobile money account, and the service being too expensive.



How was the mobile money account used in the past



Solutions suggested by respondents to increase activity rates



and mobile connections to minimize cost by avoiding ‘off-network’ calls. This phenomenon has been inflating mobile money penetration figures for many years, a problem which is exacerbated by the fact that many MNOs are now automatically registering customers for their DFS when a new SIM card is sold. Device sharing is also commonly observed, having a similarly distorting effect but leading to an undercount of mobile phone usage instead. Close to 95 percent of respondents in the Côte d’Ivoire survey reported two or more cellphones per household, and most respondents had at least two SIM cards. It seems likely that customers register for several mobile money accounts, but only end up using the preferred service. The profile of those indicating that they were inactive because they did not have a need for a digital account, was similar to that of customers who stated irregular income as a reason for inactivity; people who were employed were half as likely to report a lack of need as a reason for inactivity.

High cost was a key constraint to usage for 15.5 percent of respondents. In the case of Côte d’Ivoire specifically, the respondents may have had a point. In a comparison made by CGAP on the cost for a customer to use a bundle of digital financial services from 15 providers in selected African and Asian markets, two Ivorian DFS providers tied in the position of fourth for most expensive of that sample. High prices also drive the undesired ‘direct deposit’ behavior, in which a user deposits money directly into the recipient’s account, instead of transferring between accounts, and thus circumventing fees. Users who reported price as a reason for inactivity in the sample included poorer households as well as people with some secondary education, suggesting both categories are especially price sensitive. People who used their mobile money account to transfer money to individuals or to pay school fees were

70 percent more likely to report price as a reason for inactivity. The opposite trend was true for those who used the digital accounts to buy airtime. Such customers were 50 percent less likely to report high fees as a reason for being inactive. Respondents for whom price was a key reason for inactivity tended to be senders rather than recipients of mobile money, which makes sense, given that storing and receiving money in a mobile money account is free, while there is a fee for making a transfer.

A number of recommendations can be drawn from the research in order to improve activity levels in Côte d’Ivoire, that may also be applicable for providers elsewhere. Firstly, the cost of DFS transactions should be reviewed and reduced. This had strong support from inactive customers. Secondly, the services and products of DFS providers should be made more relevant for customers, for example by offering access to savings and loans. The study also revealed a strong demand for better distribution of agents across the country to service more locations, particularly in rural areas. Finally, there is a need to help customers understand the benefits of the services and how to use them with confidence.

**Further reading:** *The Mobile Banking Customer That Isn’t: Drivers of Digital Financial Services Inactivity in Côte d’Ivoire* by Susie Lonie, Meritxell Martinez, Rita Oulai and Christopher Tullis.

*Banking with Agents: Experimental Evidence from Senegal. Forthcoming, 2018. World Bank Policy Research Working Paper series. World Bank Group, by Sinja Buri, Robert Cull, Xavier Giné, Sven Harten and Soren Heitmann.*

Members of the MTN Mobile Financial Services sales team in discussion at the MTN office in Abidjan, Côte d’Ivoire.

6

# PRODUCT DEVELOPMENT

## Customers take the lead on product development

*How do you ensure DFS customers are happy and active? You offer them the products and services that they want. It may sound simple, but most practitioners in the industry would agree that getting the products right can be a challenging journey. When developing and launching its new Sunga wallet, Zoonna surprisingly found that customers wanted less functionality than it was prepared to offer.*

Along with simple person-to-person payments, a safe place to save is often seen as the first step on the journey towards financial inclusion and more comprehensive financial services. A financial account not only allows users to store money securely, but also enables them to better plan and manage their finances over time. Zoonna, an independent payments service provider launched in 2007 and present in Malawi, Mozambique and Zambia, decided to develop and offer a savings product in 2016 in response to an apparent demand in the market. Anecdotal research showed that customers were already sending money to themselves that they were only cashing in months later, in effect using basic transaction accounts to save for another day.

Zoonna has three 'wildly important' business goals: to develop products and services that improve the financial health and well-being of one billion people, to empower emerging entrepreneurs to build profitable businesses that create one million jobs, and to prove that a purpose-driven business can be a global model for growth and impact. To achieve this ambitious vision, its team 'engage customers with a huge amount of empathy to understand the world through their eyes, and innovate with them to

discover solutions that truly meet their needs'. This means there's very little guesswork involved when it conceives new products, as the Partnership project that launched the 'Sunga Pocket' in Zambia shows.

At the outset, Zoonna was looking to leverage the trust it had established in the Zambian market as the leading payments service provider to offer a basic wallet that would allow customers to store as well as send and receive money. The aim was to register 300,000 new users on the Sunga platform within two years, with at least 50 percent having a positive balance on their wallets. It was piloted in March 2017 as a deposit/withdrawal facility only, and research during the pilot produced some surprising consumer insights that had implications for the final product design.

During the pilot phase, Zoonna looked closely at transactions and surveyed customers by phone to better understand transaction behavior and the needs of the market. Customers reported that they found other competitive mobile wallets less attractive than the limited pilot-phase Sunga Pocket because of the ease with which they could move money in and out of these wallets, for example for airtime purchases. The Zoonna team had assumed that such additional functionality was viewed as desirable, but it turned out to be the opposite. At least some clients found that a storage wallet coupled with transaction features left the funds open to the temptations of easy spending.

In response to this finding, Zoonna has made the transactional features of the Sunga Pocket optional. Those clients who want them can have these features activated, while those who prefer to use the wallet/pocket as a place to save only, can choose to do so. Notably, the Sunga account may only be accessed at the agent location and not through mobile apps.

The marketing of the Sunga Pocket was similarly designed based on rigorous experimentation. Before the nationwide launch of the product, Zoonna tested out three different marketing methodologies to zero in on the one that would work best for the market. The first was based on instant gratification, offering all new Sunga clients a bracelet and a high chance of winning a small amount of cash. The second was a lottery offering a smaller chance of winning a larger amount, and the third was to hire roving brand ambassadors who marketed the account in high-density areas. Zoonna found that the latter was the best way to get people to open accounts, while the instant gratification succeeded in unlocking customer activity and also dramatically improved word-of-mouth marketing of the product. This information then informed the marketing strategy for the nationwide launch.

Today, the Sunga Pocket is offered as an affordable and accessible electronic account to 'save for school fees, a new mobile phone, or to launch a business venture'. The account can be accessed at any Zoonna agent at low transaction fees and no monthly charges, and it also remains open when not in use. As at December 2017, there were 72,000 registered Sunga Pocket users in Zambia, with 48 percent of them active on a 30-day basis and holding a deposit higher than ten kwacha (\$1) and a total of \$800,000 in Sunga accounts. Some Sunga customers have opened multiple accounts to save for different purposes. Based on these insights and new use cases, Zoonna is conducting additional product development to enhance user experience.

Approximately a fifth of Sunga customers are Zoonna payments customers – evidence that Zoonna's strategy to build on its payments business to offer more advanced financial products has paid off in terms of expanding reach as well as financial inclusion. Understanding your customers is key to providing products that make sense for them, and even though market research for product development may seem arduous and expensive, it can be time and effort well invested.

## What is a fair price for DFS?

**By Minakshi Ramji**

*IFC Associate Operations Officer, Johannesburg, South Africa*

The price of DFS products and services differ significantly across the African continent, reflecting a variety of business strategies adopted by providers. Some microfinance operators initially offered basic person-to-person payments services for free, based on the assumption that agent banking would expand reach and attract sufficient deposits to be sustainable. Other operators are possibly overcharging the market. Services in Côte d'Ivoire, for example, are among the most expensive DFS services in emerging markets.

While price is a significant variable, the value proposition of a DFS product does not lie wholly in its pricing. Even at a fair price, DFS tend to be cheaper than the informal alternative. Not only cheaper, but also more accessible, safer, faster and more reliable. Research with users across Africa through qualitative approaches, such as financial diaries and quantitative surveys, show that DFS users are ready to pay for a service they value, with less regard to the price than one might assume. An MFI that substantially hiked its price to ensure the sustainability of its agent network first experienced a dramatic drop in usage, but found that business picked up again once the market had absorbed the news.

Charging a fair price for DFS services ensures expansion, innovation and sustainability. IFC data across nine MFIs show that the average cost of any transaction at the agent is \$0.95, while the customer is charged about \$0.35. While the transaction fee doesn't cover the cost, agent banking is less costly than for the MFI to pay a teller to do a transaction, which is about \$1.33. More and more, institutions are moving towards indirect attribution of revenue to DFS in order to fully understand the potential impact on the institution. So, what is a fair price? One that's not usurious and one that attempts to cover direct expenses, while promoting activity and full benefit of the products for financial inclusion.



## MARKET OVERVIEW

### Zambia: A growing market with strong agent networks

Zambia is one of the less populous African countries with just 16 million inhabitants, but it also has one of the highest fertility rates in the world, and nearly half of the population is below 15 years old. The Zambian economy is very dependent on copper exports. It was one of the fastest growing economies in the world for ten years up to 2014, when copper prices fell. Consequently, in 2016 the local currency, the Kwacha, suffered depreciation and the central bank restricted lending. Urbanization is currently at 42 percent and growing. Even though 85 percent of employment is agriculture-related, agriculture contributes less than 6 percent to GDP and poverty is high at 61 percent, concentrated in rural areas.

The Zambian banking sector faces a number of challenges, with relatively few branches, concentrated mainly in the provinces of the capital Lusaka and the industrialized Copperbelt. Low branch penetration is mainly due to the high cost of opening branches, estimated at US\$ 0.35 million per branch.<sup>1</sup> Distribution is further limited by the fact that nearly two-thirds of POS devices are located in the Lusaka area, as well as 43 percent of the country's ATMs.<sup>2</sup> For these reasons, some banks have provided agent banking networks for several years. A considerable constraint to efficient banking operations is the lack of a national payment switch. The Bank of Zambia has been developing a national payments switch that was originally due to go live in 2014.<sup>3</sup>

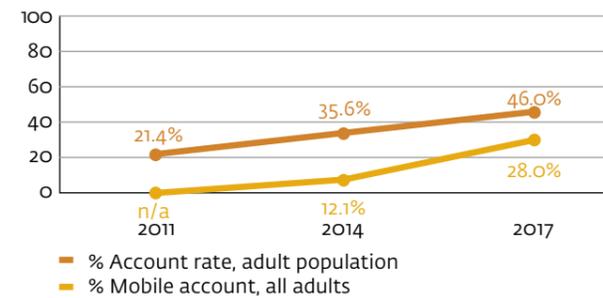
Financial inclusion has improved significantly in recent years, rising from 37 percent in 2009 to 59 percent in 2016, and two-thirds of people have an account with a financial institution. The banking sector is dominated by foreign, mainly South African, banks. The largest commercial bank is Zanaco, part owned by Rabobank. With nearly a

million customers, Zanaco positions itself as 'the bank for the unbankable' in Zambia, and has a network of Zanaco Xpress Agents, targeting SMEs including agricultural smallholders, and women. Zanaco launched Zambia's first mobile banking service in 2008, including an entry-level mobile account called Xapit, with low fees and the option of a companion Visa debit card. Some local banks are starting to offer digital mobile and agent banking services. Investrust Bank is a public company that has a focus on niche markets such as students, SMEs and farmers, with products like the 'Investrust Farmer' low-cost current account. Investrust also operates an agent network that can provide a range of the services available at branches, and provides mobile and Internet banking. The microfinance institution FINCA also provides an agent network, FINCA Express, which uses biometric authentication POS devices. More than two-thirds of FINCA transactions are via the agent network.

Over half of Zambians own a mobile phone, and the market is dominated by MTN and Airtel. The MNO-provided DFS have been relatively slow to gain traction in Zambia. Both Airtel and MTN have offered mobile wallets for more than five years, providing a basic range of mobile money transaction types. Usage has been limited until recently, with just five percent of customer wallets being active. A number of initiatives by the MNOs are said to be increasing wallet usage (although data is not yet available), such as the MTN partnership with fintech Jumo to provide micro-loans based on customers' mobile money and mobile network usage. MTN has also launched mobile international remittances, allowing transfers between its wallet and several East African DFS providers.

Currently the most successful DFS operating in Zambia is the OTC service named Zoona, which has the largest agent network in the country.<sup>4</sup> It is principally a domestic remittance service, with agents operating from Zoona kiosks placed in strategic locations. The management of an efficient agent network is Zoona's main expertise, with its focus on high quality agents – typically young, self-employed entrepreneurs. Zoona uses data science to ensure that kiosks are in the best locations and that agents have sufficient traffic and liquidity to ensure a good return. More recently, Zoona has offered an account-based unremunerated savings product called Sunga Pockets.<sup>5</sup>

Overall financial inclusion rate vs mobile money account rate



World Bank, Findex

Any account ownership, adult population, 2017	46%
Any account ownership, women, 2017	40%
Any account ownership, young adults (15-24 years), 2017	42%
Financial institutions account, adults, 2017	36%
Mobile money account, adults, 2017	28%
Saved at a financial institution, adults, 2017	14%
Saved semi-formally, in a savings club or with person outside the family, adults, 2017	23%
Borrowed formally, from an institution or credit card, adults, 2017	10%
Borrowed from friends and family, adults, 2017	31%
Poverty rate, 2015	57.5%

GSMA

Unique mobile network subscribers, 2017	9.0 m
Mobile penetration rate, 2017	53%

Bank of Zambia, IMF FAS, AFSD

Volume of MM transactions, Jan-Sep 2017	116,240,904
Value of MM transactions, Jan-Sep 2017	474.35 m US\$ <sup>6</sup>
Registered mobile money users (wallets), 2015	4,917,204
Number of agents, 2015	19,249
Licensed commercial banks, 2015	19
Bank branches, 2015	391
Total assets, 2015	7,776.49 m US\$

Mix Market

Licensed MFIs	18
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### Industry opinion:

*What product will lead DFS adoption in the near future?*

DFS providers are challenged to develop market-responsive products. To ensure continued uptake and use of DFS, products require a customer-centric approach to meet the needs of the customer. Payments are often the launch product for new DFS implementations, but the number and variety of product offerings grow as markets mature.



Credit	(30%)
Merchant payments	(25%)
P2P	(23%)
Savings	(15%)
Bulk payments	(7%)



## RESEARCH FOCUS

# Leveraging alternative data to develop new credit products

*There's been a large increase in digital credit providers in Sub-Saharan Africa following the breakthrough launch of M-Shwari in Kenya in 2012 by Safaricom and Commercial Bank of Africa. M-Shwari's story is an excellent study in how to use data creatively to bring a new product to market, providing nano-loans to millions of previously excluded small-scale borrowers based on data-driven credit-scoring.*

Credit scoring technology looks at past borrower characteristics and repayment behavior to predict future loan repayment behavior. But what about the case where there is no past repayment behavior – the case of the millions of people who have been excluded from the formal financial system until the launch of affordable and accessible financial services such as mobile money and agent banking?

The emergence of Big Data and the sources and formats of these data have presented additional approaches to the credit scoring process. Incorporating these alternative data sources drives alternative credit scoring models. In East Africa, for example, there are solar devices that produce information about the unit's usage and DFS repayments made by the owner. Data are then used to perform instant credit assessments that can ultimately drive new business. For DFS providers, data can be drawn from an ever-expanding array of sources: transactional data, mobile call records, call center recordings, customer and agent registrations, airtime purchase patterns, credit bureau information, social media posts, geospatial data, and more.

It is estimated that approximately 2.5 quintillion bytes of data are produced in the world every day. To get a sense of the quantity, this amount of data exceeds 10 billion high-definition DVDs. Most of these data are young – 90 percent

of the world's existing data were created in the last two years. The recent digital data revolution extends as much to the developing world as to the developed world. In 2016, there were 7.8 billion mobile phone subscriptions in the world, of which 74 percent were in developing nations. The future is expected to be even richer in data. As the costs of smartphones fall, mobile Internet access is set to rise from 44 percent in 2015 to 60 percent in 2020. In Sub-Saharan Africa, smartphone usage is predicted to rise from 25 percent in 2015 to 50 percent of all connections by 2020.

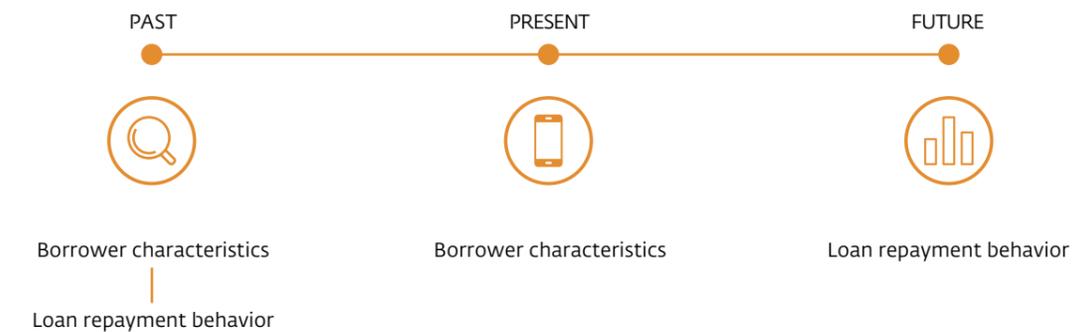
Commercial Bank of Africa (CBA) and mobile operator Safaricom were early to recognize the power of mobile phone and mobile money data. M-Shwari, the first highly successful digital savings and loan product, is well known to followers of fintech and financial inclusion. It has given small credit limits over mobile phones, called nano-loans, to millions of borrowers, bringing them into the formal financial sector. Similar products have since been launched in other parts of Africa, and new competition has crowded the market in Kenya.

MNOs have extensive data on their clients' mobile phone and, in many cases, mobile money usage, but it is less clear how that data can be used to predict the ability and willingness to repay a loan without data on the payment of past obligations. By definition, there is no product-specific past data for a new product. One way to still use credit scoring with a new product is to use expert judgment and domain knowledge to build an 'expert scorecard', a tool that guides lending decisions based on borrower risk-rankings.

Another way to use credit scoring with a new product is to study a set of relevant client data, such as MNO data, in relation to loan repayment information, such as:

- **General credit history or a bureau report:** This only works for clients with a file in the bureau.
- **Similar credit products:** Another credit product, similar enough to be relevant to the new product, can be used as a gauge. While past repayment of that product may or may not be representative of future repayment of the new product, it may be an acceptable approximation, or 'proxy', for initial modeling purposes.

### Timeline definition of credit scoring



### Okao Jahzi and M-Shwari Product Comparison

OKAO JAHZI	AMOUNT	M-SHWARI	AMOUNT
The lower of airtime spends over the last 7 days or 100 Kenyan shillings		100 to 10,000 Kenyan shillings	
PURPOSE		PURPOSE	
Used for airtime only		Used for any purpose	
REPAYMENT TERM		REPAYMENT TERM	
72 hours		30 days	



The first M-Shwari scorecard was developed using Safaricom data and the repayment history of clients that had used its Okoa Jahazi airtime credit product. The two products were clearly different, as shown in the table on page 111. The M-Shwari product offered borrowers more money, flexibility of use and time to repay. The assumption was that those who had successfully used the very small Okao Jahzi loans would be better risks for the larger loan product.

The first M-Shwari credit scoring model developed with the Okoa Jahazi data, together with conservative limit policies and well-designed business processes, enabled the launch of the product, which quickly became massively successful. CBA expected the scorecard based on Okoa Jahazi data to be redeveloped as soon as possible, using the repayment behavior of the M-Shwari product itself. Some behaviors predictive of airtime credit usage did not translate directly to M-Shwari usage, and appropriate changes to the model based on the actual M-Shwari product usage data reduced non-performing loans by 2 percent. M-Shwari continues to update its scorecard periodically, based on new information.

The M-Shwari nano-loan product succeeded, thanks to the timely confluence of:

- **Access to MNO data:** CBA had a first mover advantage due to its strong partnership with Safaricom. Today, Safaricom sells its MNO data to all banks in Kenya.

- **A well-designed product:** Small, short-term products are better fits for credit scoring, particularly for new products. Rapid feedback on the target population's repayment performance enables timely model redevelopment and controls risk.

- **Good systems and people:** The M-Shwari management team is lean and flexible, bringing together a unique combination of management and technical skills, as well as the systems to ensure smooth implementation.

- **Leveraging outside resources:** Financial Sector Deepening (FSD) Kenya supported CBA with risk modeling expertise crucial to developing the first scoring model and transferring skills to M-Shwari's team.

Since banks must report nano-loan repayments to bureaus and central banks, nano-lending has brought millions of people who previously lacked access to banks into the formal financial sector across the world, establishing credit history that is a stepping stone to unlocking access to other types of loan products. However, there is concern that nano-loans create a cycle of debt for low-income individuals. Several million people with bad nano-lending experiences could become blacklisted at local credit bureaus, which greater endorses the need for consumer protection and financial literacy campaigns coupled with the new mass market product launches.

**Further reading:** *Data Analytics and Digital Financial Services Handbook*, by Dean Caire, Leonardo Camiciotti, Soren Heitmann, Susie Lonie, Christian Racca, Minakshi Ramji, and Qiuyan Xu.



# Ugandan DFS users enjoy a diversity of products

*An Airtel Money sales team has pitched their maquis at a busy street in downtown Kampala, Uganda.*



Mobile money in Sub-Saharan Africa initially took off with person-to-person transfers, a perfect fit for economies often characterized by labor migration and dependency on social and family networks. As markets mature, providers have found demand for a variety of financial services. Among first generation products you often find airtime top-ups, safe storage, bill payments and some simpler government-to-person transfers and business-to-person payments. The next stage tends to include savings products, credit, and merchant payments. In the most advanced markets, providers may offer insurance or products-on-demand, such as solar power or electricity.

It is clear that customers have different motivations for using services such as Airtel Money, stemming from a variety of financial realities that require various solutions.

“It is more secure. Actually, it is very dangerous to have money in my pockets,” says motorcycle taxi driver, Philly.

Vegetable seller Sarah Asimwe uses Airtel Money to source produce from farmers in the countryside. “Because I don’t have money for transport to go there, I can just send to them and they bring me bananas, oranges and mangos,” she says.

*While the DFS industry breakthrough came with person-to-person payments, users across the continent are increasingly asking for a full suite of banking products. In Uganda, Airtel Money offers payments, cash withdrawals, bank-to-wallet transfers and bill payments.*

**Kampala, Uganda.**

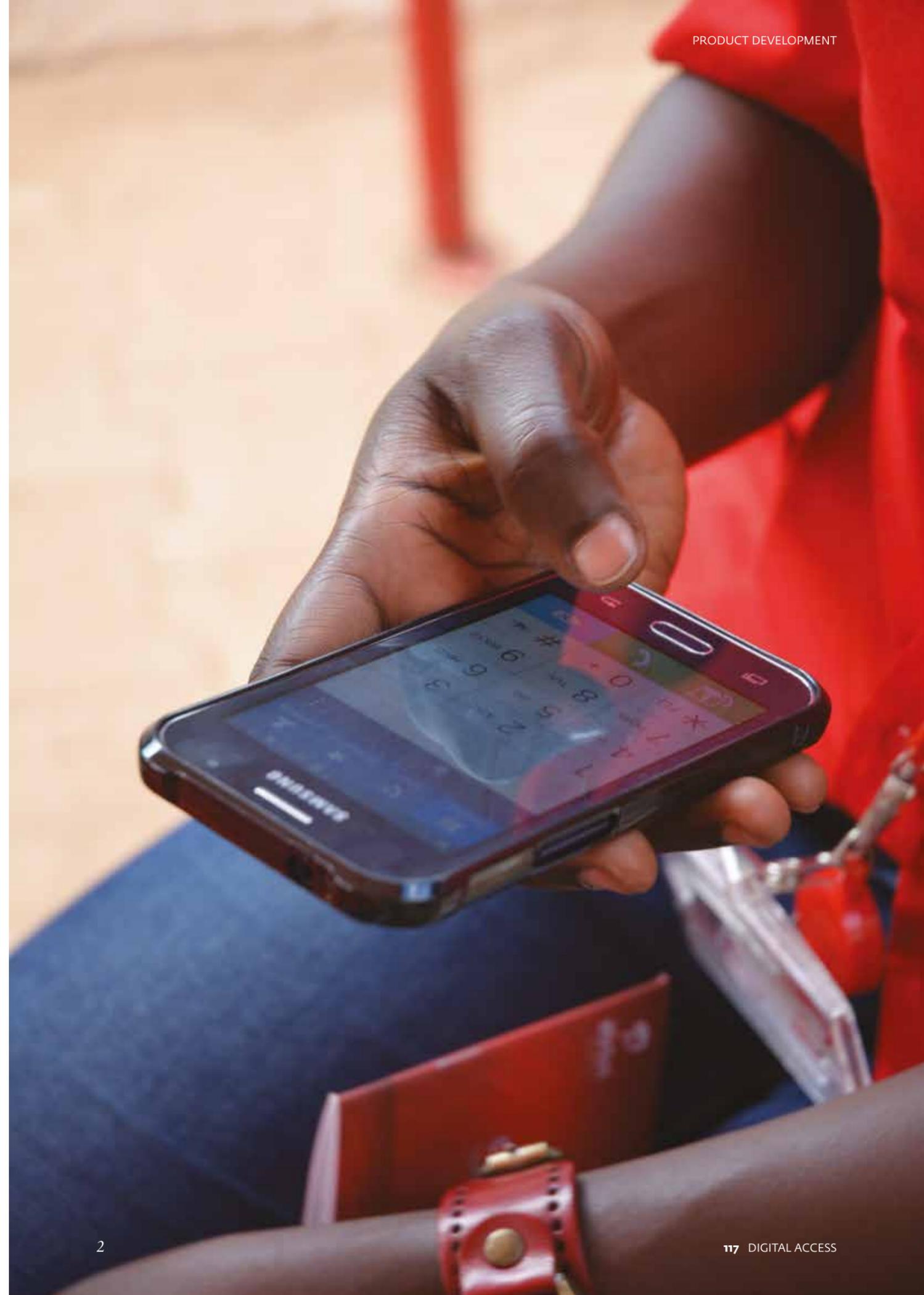
Under a red, branded tent on a busy street in downtown Kampala, the capital city of Uganda, Airtel Money promoter Jimmy Musana flips through the product catalogue to show potential new customers what the service has to offer.

“You can pay a water bill using Airtel Money, you can pay an electricity bill. You can deposit money into your bank account. You can also withdraw your money from your bank to your Airtel Money account using this service,” he says. “You know, in Uganda, it is a digital world now.”

Airtel Money launched in Uganda in 2012. Customers include small-scale shopkeepers, restaurant owners, market traders, the characteristic Ugandan *boda-boda* drivers (motorcycle taxis), and ordinary people. Many find the service beneficial to their business operations, signaling a growing demand also for digital merchant payments.

“I have customers who pay me through Airtel Money. They come and they don’t have money, so they pay through Airtel Money, so that the business goes on,” says Leonard Kalule, a street-stall grocer in Kampala.

1. Explaining the services and products to new customers is critical to uptake.
2. An Airtel Money sales agent in Kampala, Uganda, getting ready to demonstrate the service on her phone for new customers.



Airtel Money Uganda CEO Frances Matseketsa describes the service's typical customer as "an excited customer yearning to learn more about DFS."

"I see a huge impact on financial inclusion, especially with more products that will uplift the poor and bottom of the pyramid customers; products like micro-loans and micro-savings and inward international remittances that will reach rural people from abroad," he says, adding that customers "want more awareness, more education and more programs that teach them DFS and the benefits associated with it."

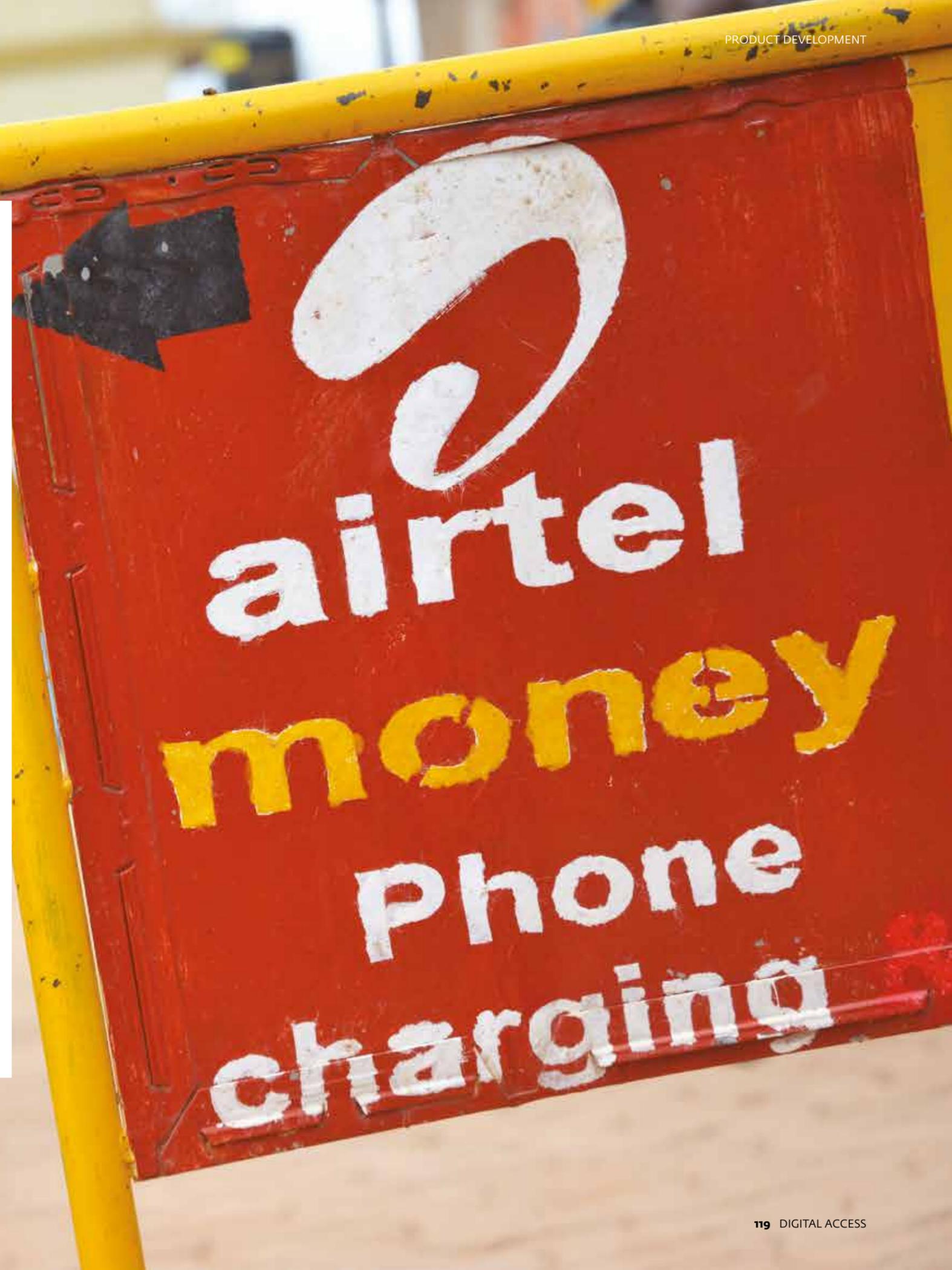
The long list of bill payments you can make through Airtel Money shows just how transformative mobile money can be, and the range of payments it may apply to: in addition to water and electricity bills, as mentioned by Airtel promoter Musana, users can pay for various television services, street parking, fuel, school fees, and even play the national lotto.

"I'm saving money on my Airtel Money line because I hope to be an agent of Airtel Money. I want to save to get at least some capital to start my business," says Eunice, a small-scale grocer whose shop is right next to an existing Airtel Money agent.

Airtel Money does not yet offer users savings accounts or loans, but may do so in the future. When you have a product that is used by hundreds of thousands of people each day, you only need to watch how they use the product as a guide to product development.

"I see a huge impact on financial inclusion, especially with more products that will uplift the poor and bottom of the pyramid customers – products like micro-loans and microsavings and inward international remittances that will reach rural people from abroad," says Matseketsa.

*Financial inclusion in Uganda has jumped from 20.5% percent in 2011 to 59.0% percent in 2017.*



Sarah Asimwe, market trader:

“ I can just send money to the farmers in the villages, and they send me bananas, oranges and mangos.”



**Eunice, shopkeeper:**

*“Since it is next to my place, the money that I operate in my shop, I bank it so fast.”*



**David Musinguzi, Airtel Money agent:**

*“Every day, I have fifteen to twenty mobile money customers, and I have earned from mobile money.”*



**John Kizza, Airtel Money field manager:**

*“The agents are our face to the customers, so we have to train them continuously, so that they offer good quality service.”*



**Leonard Kalule, street-stall grocer:**

*“If I would get the chance of getting an Airtel loan, I think I will be benefiting to expand my business.”*

# 7 CUSTOMER ACQUISITION

## Agents are the key to active customers

*The value proposition of digital financial services to users and potential users is often based on promises of accessibility, affordability, speed and convenience. It shouldn't be a hard sell, especially not to those who were previously not offered any formal financial services at all. Bringing new users on board and making sure existing users are active on the channel can still be challenging.*

Airtel Money was launched in Uganda in 2012, and within two years it had 10 million registered users. This is impressive for a country with just over 40 million people. As is the case with most deployments, activity rates were low. Only about 10 percent of those users, 1.1 million, were actively using the service on a 30-day basis (performing at least one financial transaction on the service per 30 days). To work out how best to address the huge gap between registered and active users, Airtel Money reached out to IFC in 2014 and a project was initiated with the target of increasing the active user base to 2.5 million by 2018.

Airtel Money was using its own promoters to acquire customers. They worked independently of Airtel Money agents, signing up customers and collecting deposits from users at their location. Although this had been an effective approach to signing up large numbers of registered users, it created a number of challenges. Promoters failed to demonstrate the role of agents to users since they were acting in parallel to agents and not necessarily geographically linked to agents, which meant many customers soon became dormant. The promoters could themselves only complete small value transactions, since they had limited

resources (e-value and cash) on them for security reasons, thus not able to demonstrate the full capacity of the service to users.

IFC carried out an analysis to compare the lifecycle and health of a wallet opened by a promoter compared to a wallet opened by an agent, and the former ran into dormancy at a comparatively high rate. Account holders introduced to the service by agents were more active and loyal to the service. The project thus designed a strategy to better leverage agents for customer acquisition, an approach that has proved successful in other markets.

Agents are often effective at encouraging new clients to join a service because they are part of the target community. Trust is the basis of every economic transaction. People don't use a financial service they don't trust. It is likely that people trust service providers living next door better than promoters from far afield. To leverage agents for customer acquisition is to leverage not only the proximity they hold to potential customers, but also the trust and social relationships they have already built in the market as small-scale entrepreneurs and community members. Financial services and products also often require an elaborate process of consumer education, sometimes provided on an ongoing basis. When well-managed, agents can be exemplary teachers able to break down the customer value proposition into simple messages that resonate with their market.

The IFC team also provided customer analysis, to establish the number and distribution of inactive customers per region. This was then mapped against agent distribution and investment to establish which agents had the capabilities to complete activations, deposits and withdrawals. The outcome of this was a list of target areas and route plan for the activation activities. To have an effective activation campaign, agents were prepared with the right information and investment to handle a rapid increase in new customers.

Two firms were hired and 4,200 activation events were held nationwide, supporting over 5,000 agents. A typical activation campaign had 10-15 promoters/educators working in a radius around an agent speaking to the market about Airtel Money and its benefits. A successful pitch would conclude with registration if the user was new to the service, or an activation if the customer had been dormant, and at least one account transaction completed to demonstrate use. The campaign focused primarily on P2P, and most demonstrations performed a payments service transaction or an airtime purchase. The drive was executed methodically to areas that had high levels of registrations but low activity. Most of these areas were urban, and a conscious effort was made to also reach rural areas. Of the approximately one million people touched by the activation campaigns, 50 percent reactivated their accounts through registration, a deposit or password reset.

An additional benefit of the customer activation drive was that it allowed Airtel Money to tackle a prevalent problem in the DFS industry: that of fraudulent direct deposits. This is when customers deposit money directly into a recipient's account, instead of transferring money from his or her own account to the recipient, usually to avoid paying transfer charges. Some agents also encouraged this behavior to be able to directly charge users a little extra for 'service and savings'. If widespread, direct deposits can have a very damaging effect on the profitability of the channel for the provider. Airtel Money's customer education campaign helped users understand the importance of managing their own transactions to avoid being complicit in fraud and to avoid fraud on their own accounts. Following the customer acquisition campaign, P2P transactions increased by over 200 percent in volume and over 300 percent in value.

As at November 2017, Airtel Money's active user base had grown by 318 percent, by far surpassing the initial target set for the close of the project. This was achieved by focusing on agents to drive customer acquisition, and by ensuring good consumer education as part of the acquisition campaign.

## We must protect the consumer

By Tiphaine Crenn

IFC Operations Officer, Dakar, Senegal

There is no doubt that digital financial services hold huge promise for the expansion of financial inclusion. Nowhere is that more evident than in Sub-Saharan Africa, home to 277 million registered users with about 100 million active accounts. But as millions of new clients get access to formal financial services, there needs to be practical guidelines for the industry to ensure proper customer protection.

The biggest concerns are around digital credit. Nano-loans are often based on automated credit-scoring and a contactless methodology, and present new risks to both consumers and providers. Borrowers risk becoming over-indebted, not understanding the pricing properly, or accepting a loan that they later realize that they don't need. Providers that deliver a poorly conceived nano-loan product risk non-repayment, fraud, data security breaches and reputational damage.

Data from Kenya, the most advanced DFS market on the continent, show that 50 percent of the 600,000 Kenyans who have been blacklisted by credit bureaus have outstanding balances of less than 100 Kenyan shilling, i.e. not even one US dollar. Some are not even aware that they owe the digital credit provider. The cost and effort to wipe off their bad credit history is not balanced with the amount owed.

How do we prevent similar situations in the future? It can be as simple as making sure that Terms & Conditions are presented in local languages on the phone menu, or that all fees, commissions and interest rates are clearly shown on the screen before a customer clicks to apply for a loan. Or that agents and call centers are well equipped to answer client questions and that feedback loops are an integral part of product design.

The focus should be on pragmatic approaches that do not unduly burden providers, but make sure to protect DFS consumers. Then we can speak of a true promise for financial inclusion.



## MARKET OVERVIEW

### Uganda: A mature market targeted by fraudsters

Uganda has a population of 39 million, mainly located in rural areas (76 percent). Consequently, agriculture is the major source of employment, engaging nearly three-quarters of the labor force. Coffee is the main agricultural export, followed by tea, cotton and tobacco. The country has one of the fastest growing populations in the world with nearly half under 15 years old. One-third of Ugandans live below the poverty line.

DFS in Uganda is dominated by mobile money operators. Uganda was one of the first countries in Africa to adopt DFS at scale, and there are now seven non-bank DFS providers serving 7.6 million registered users. In 2016, mobile money transactions were US\$ 9 billion, an impressive rise of 34 percent on the previous year. Transaction numbers grew by 40 percent to nearly one billion in the same period.<sup>1</sup> Uganda has a relatively mature DFS market offering consumers a range of complex services including interest-bearing savings, and micro-loans with credit ratings based on DFS account history and usage of the mobile network. Together, the two MNOs are responsible for more than 90 percent of all DFS transactions. MTN, in partnership with the Commercial Bank of Africa, launched the MoKash savings and loan service in 2016 and one year later reported that 1.2 million people – over a quarter of their active DFS users – were actively using the MoKash service. A total of US\$ 8 million was borrowed in the first year.<sup>2</sup> In early 2017, Airtel launched Wewole, a micro-credit service, in partnership with JUMO, for which results have not yet been made available.<sup>3</sup>

Banks are adopting mobile banking, using mobile money as the key value proposition and enabling transactions between bank accounts and wallets. However, uptake is so far lower than in neighboring Kenya and Tanzania. Agent banking regulations are relatively new in Uganda,

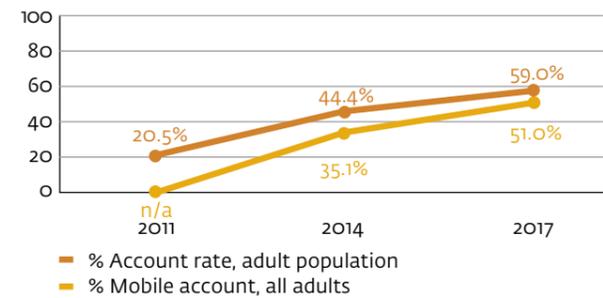
and so far only a few banks have launched their own agent networks, including Centenary Bank and Equity Bank. However, most banks have started to put in place the structures and processes to support agents. The Uganda Banking Association is planning to launch a joint venture business with Eclectics International, called ‘Agent Banking Company’. This is an interoperable platform that will start by connecting Barclays, Diamond Trust Bank Uganda, Stanbic, and Bank of Africa. The first transactions to be supported will be cash in/out, and bill payments. More complex transactions will follow thereafter.

The combination of a strong DFS infrastructure and agricultural production makes Uganda ripe for digitizing agricultural value chains, and a number of initiatives have been piloted in recent years. For example, Kyagalanyi Coffee Limited is the largest single coffee exporter in Uganda, and deals with farmers located in remote mountainous areas. By partnering with MTN and Fenix International to create suitable infrastructure, it can pay farmers for their harvest in whole or in part by DFS. Similar initiatives have been undertaken in other sectors, including sugar and palm oil, although they have yet to reach scale.

There have been several well publicized fraud cases in the Ugandan DFS sector. In 2015 the Anti-Corruption Court heard a large-scale mobile money fraud case resulting in the loss of US\$ 3.4 million, which undermined consumer confidence and slowed the development of the market for some time. In DFS agent research, Ugandan agents reported the highest incidents of crime and fraud of eleven countries studied. Over half of the agents interviewed reported experiencing fraud, and one-third had been the victims of theft in the previous year. High performing agents are more often targeted by criminals and this has caused some agents to put a daily limit on their transactions, limiting their ability to serve customers.<sup>4</sup>

There are eight MNOs in Uganda, although some only offer data (Internet) services. Mobile coverage is good and the market leaders are MTN and Airtel. Data coverage (3G) is available in approximately half of the country, and the government is developing a National Broadband Strategy that will promote open access and infrastructure-sharing to reduce infrastructure duplication and the cost of network deployment.<sup>5</sup> In 2017, over 40 percent of Ugandans were classified as Internet users, and one-third used a mobile device to go online.

Overall financial inclusion rate vs mobile money account rate



World Bank, Findex

Any account ownership, adult population, 2017	59%
Any account ownership, women, 2017	53%
Any account ownership, young adults (15-24 years), 2017	57%
Financial institutions account, adults, 2017	33%
Mobile money account, adults, 2017	51%
Saved at a financial institution, adults, 2017	13%
Saved semi-formally, in a savings club or with person outside the family, adults, 2017	37%
Borrowed formally, from an institution or credit card, adults, 2017	15%
Borrowed from friends and family, adults, 2017	46%
Poverty rate, 2012	34.6%

GSMA

Unique mobile network subscribers, 2017	17 m
Mobile penetration rate, 2017	41%

Bank of Uganda, AFSD

Volume of MM transactions, 2016	974,746,000
Value of MM transactions, 2016	12,030.9 m US\$ <sup>6</sup>
Registered mobile money users (wallets), 2016	21,585,484
Number of agents, 2015	54,000,000 <sup>7</sup>
Licensed commercial banks, 2016	25
Bank branches, 2016	552
Total assets, 2015	6,703.08 m US\$

Mix Market

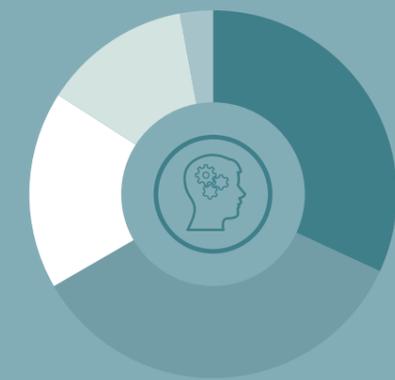
Licensed MFIs	5 <sup>8</sup>
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### Industry opinion:

*What is the most important factor in attracting new DFS users?*

The number of registered and active users of DFS is steadily rising across the African continent. There are now over 277 million registered users on the continent, with about 100 million active accounts, almost 60 percent of the global total. More than 40 percent of the adult population in Kenya, Tanzania, Zimbabwe, Ghana, Uganda, Gabon and Namibia are using mobile money services on an active 90-day basis (GSMA, 2016). What brings new customers to DFS?



Peer endorsement	(35%)
Highly visible agent network	(32%)
Strong brand	(17%)
Customer education	(13%)
Supportive staff network	(3%)



## RESEARCH FOCUS

# Historical, social and cultural factors influence uptake of DFS

*As DFS have rapidly expanded across Sub-Saharan Africa, millions of people can now make payments, save, and borrow, with a few clicks on a mobile phone or a finger's swipe at an agent's point-of-sale device. To better understand the African DFS user, IFC and the Mastercard Foundation commissioned a rare ethnographic study into the usage, perceptions and attitudes to DFS on the continent.*

The study aimed to understand what digital financial inclusion means in different African contexts in relation to historical, cultural and social factors. It is a comparative ethnographic exploration of the reception of digital financial services in Cameroon, the Democratic Republic of Congo, Senegal and Zambia. It focused primarily on four key research questions: What is the contextual infrastructure of digital financial services in Sub-Saharan Africa? How is the meaning of money changing due to digitization? What are the factors informing people's perceptions and attitudes towards DFS? What is the impact of DFS on financial inclusion, beyond the numbers that measure access to formal financial accounts?

The researchers interviewed both users and non-users of DFS, in urban as well as rural areas, in all four research countries. In Zambia, the researchers used bus stations as sites for finding informants. In Cameroon, the team focused on the informal sector, interviewing *buyam-sellams* (street traders), motor taxi drivers, and other small-scale business proprietors. They also spoke to students, teachers, journalists, accountants and farmers. The Senegalese team interviewed merchants, traders, and international migrants and their families. In the DRC, the researchers also primarily focused on the informal sector, speaking to merchants, traders, and farmers, plus students.

One of the main findings of the study is the crucial and overarching importance of trust, and how this notion is culturally specific and historically embedded in each society. All of the economies in which the case studies took place have experienced large swings of economic progression and deterioration over time, sometimes reflected in a collapse of the financial sector. Consequently, some potential DFS users have learned to primarily rely on informal financial services and may be reluctant to adopt services perceived to be linked to a volatile banking sector. In such markets, it may be especially important for DFS providers to distinguish themselves from traditional financial services providers to attract users, and it also becomes crucial to swiftly overcome any issues of balancing floats, network outages or similar bugs in the DFS system.

Another key finding of the study is the high degree of mobility in the studied economies, both with regard to money and people. Many African economies are indeed mobile and network economies, and should thus be ideal for the introduction of DFS. Zambia, for example, is a mining economy with considerable internal migration. Typical for the mining economies of southern Africa is the long-term separation of families, with the male breadwinner working in the mining centers while the families remain behind in rural areas. Domestic remittances have thus long played a great part in the Zambian economy. To some extent, the plantation economy of northern Cameroon provides a similar context. In some other African countries, such as Senegal, international remittances are commonplace due to migration to Europe and other parts of the world. In all these types of economies money has been 'mobile' for a long time, and family structures and other networks are crucial for such mobility to take place.

Some of the findings of the study relate to the cultural and social appropriation of new technology, showing, for example, how the marketing of DFS sometimes misses the mark when not tailored to local identities. Regardless of actual legislation in a market, the study also revealed that people's perceptions of consumer protection policies play an important part in the decision to adopt DFS or not. Fears of new technology also emerged as a powerful barrier to DFS adoption, not just in terms of technological literacy, but also due to the anticipated effect of new technology on social and cultural norms.

### Research question:

*How do historical, cultural and social factors influence the adoption of DFS?*

**Data collected:** Field observations, interviews, focus group discussions and archive research carried out by the research teams in Cameroon, DRC, Senegal and Zambia.

**Methodology:** Ethnographic.

**Primary conclusion:** Trust is of overarching importance in determining whether new users will adopt DFS or not.

Digital Financial Services –  
A framework for understanding people's perceptions and relationships



#### TRUST

Historical roots of monetary transactions

Mobility of people and money

Risk perceptions

Technological appropriation

Networks of belonging

Economic hierarchies



The choice to take up a financial service is also influenced by people's economic status and networks of belonging. Interestingly, the study shows that in some instances a sense of social or economic exclusion increases the likelihood of the adoption of DFS, while in other instances it can be a barrier. A majority of informants across the four countries had a preference for cash. This is believed to be partly due to unfamiliarity with the general concept of mobile money or e-money, a lack of financial literacy, a preference for personal contact when dealing with money, and even the simple fact that cash remains dominant in many day-to-day circumstances. For those who have chosen to appropriate DFS, the study shows that this can be a first step towards adopting a range of formal financial services, and that DFS, as such, can serve to help formalize the large informal sector in many African countries.

Six themes emerged from the ethnographic findings that may serve as a framework for deepening our understanding of the emerging DFS customer and market: the historical roots of monetary transactions; mobility of people and money; technological appropriation; risk perceptions; networks of belonging; and economic hierarchies. Each individual category can act as a driver or a barrier for adopting and using digital financial services. The way the user feels about DFS often depends on the degree of trust he or she ultimately feels for the service on offer, often an outcome of all the themes above. Examined together, the themes thus provide a high-level risk assessment for a given market. As such, it may help providers identify areas of specific concern to increase DFS uptake or activity.

For example, the assessment produced four socio-cultural drivers and two barriers to DFS uptake in Senegal; demonstrating how the persistent use of traditional ways of sending and saving money, as well as low levels of financial and technological literacy, may pose challenges to DFS providers in the market. The long-established prevalence of migration and remittances in the Senegalese market, a relatively high level of trust in consumer protection,

well established practices of transfers within social networks, and an appreciation for how DFS may be a stepping stone to access more traditional forms of banking services, are factors that may work in favor of DFS in Senegal on the other hand, and can be leveraged by providers.

In Anglophone Cameroon, the plantation economy has established historical patterns of mobility of people and money that creates a conducive market environment for DFS. Still, the continued trust in, and popularity of, established socio-financial structures is a barrier to DFS market development. Low levels of technological appropriation and DFS reach in rural areas, a perception of poor consumer protection, existing socio-economic inequalities, and strong feelings of social exclusion in the informal sector, may also make this a challenging market for DFS providers.

In the DRC, a historical mistrust of the banking sector seems to work against the adoption of formal financial services in general, but favor the adoption of DFS over other financial services. An underdeveloped technological infrastructure and unclear policies with regard to consumer protection also work against DFS adoption, while the need to transfer money across the vast country, the perceived anonymity of DFS transfers, and the convenience DFS offers to the informal sector, are factors that work in favor of DFS expansion. In Zambia, the mining economy has created domestic labor migration coupled with remittances that lay a natural foundation for DFS, while ineffective marketing appears to discourage potential DFS users and at least certain segments of the market seem to consider formal financial services out of reach. It is notable that technological appropriation is a challenging issue across all markets.

**Further reading:** *A Sense of Inclusion: An Ethnographic Study of the Perceptions and Attitudes to Digital Financial Services in Sub-Saharan Africa*, by Anna Koblanck, Soren Heitmann, Gisela Davico and the African Studies Center Leiden, University of Leiden.

# Saving for the future - one dollar at a time

*Microfinance institution FINCA was first to launch biometric point-of-sale devices for agent banking in the Democratic Republic of Congo.*

Many Congolese have long held a mistrust for the formal banking system, based on decades of mismanagement and many defaults. Mobile money is seen as a reliable and accessible alternative, attracting students, traders and small-scale entrepreneurs.

**Kinshasa, Democratic Republic of Congo.**

At about 9 o'clock in the morning, Bertho Kongolo and his colleagues at microfinance institution FINCA assemble a marquee under a tree along the road that divides Quartier Jamaïque and Quartier Congo in an area of the Congolese capital Kinshasa called Sakombi. As the FINCA team arrange their red marketing banners on the sandy ground, and connect the DJ's equipment to an extension cord from the shop of a nearby FINCA Express agent, the people of Sakombi begin a new day.

Across the street, a group of young women arrange trays of fresh vegetables on offer to passers-by. Next to them,

two elderly women sell freshly baked bread from plastic buckets on the pavement. On the main road, commuter taxis travel back and forth, the conductors standing in the open doors to spot potential travelers. This is not an area where traditional banks would spend their marketing money. The prospective customers in Sakombi are among the world's poorest people, considered expensive and high-risk clients by most financial institutions.

Some might even think that money is so scarce in this area that there is no need for banking services, but as the sound of popular Congolese musician Koffi Olomide blare out from the speakers, the chairs under the FINCA marquee quickly fill up.

"I'm responsible for a large family and my money is not safe at home," explains Patrice Ginakubundi, father to six children and one of the first new FINCA customers of the day, signing up for a savings account with an initial deposit of two dollars.



Diego Talani has found success as a FINCA agent.





He sells bread and sausages from a plastic bag hanging on his arm, and earns an income of 100 dollars in a good month. Like many Congolese, he has found that the traditional informal savings groups, known as *bwakisa carte*, are not always reliable. Keeping his money at home is not a good alternative; once he found his hard-earned dollar bills had been eaten by insects. “I am saving for my children to study, and one day I might buy a piece of land,” he says.

When FINCA DRC launched its digital channel and agent network in 2011, there were few other places in the world where access to financial services was as poor as in the Democratic Republic of Congo. Following decades of conflict and fragile development, many Congolese have lost faith in the financial, legal and regulatory systems. Infrastructural challenges, including the lack of national identity documents and legal procedures to endorse traditional collateral, have restrained the development of the financial sector and the provision of access to finance.

“Financial inclusion was below 5 percent in the DRC, but has increased to over 10 percent because of the growth in mobile money. Our typical customers are low-income micro-entrepreneurs who serve the poor. They don’t have a large revenue, and the aim for us is to help improve their standard of living,” says Mamie Kalonda, CEO of FINCA DRC.

FINCA opened its doors in the DRC in 2003 as a non-governmental organization, and became a fully licensed microfinance institution in 2008. Equipped with biometric point-of-sale devices, FINCA’s 1,400 FINCA Express agents today handle 85 percent of its total transactions. At an agent, customers can perform all transactions that are possible at a branch. Agents are selected on proximity to potential customers and on their business record. Often, banking services are only a complementary line to the individual’s original business, but some agents have found the FINCA Express outlet profitable enough to make it their prime focus.

Diego Talani has turned his brother’s currency exchange on the corner of a busy street in a part of Kinshasa called Kitambo into a popular FINCA Express. “Since it has been going well with FINCA, I ended all other contracts I had before,” he says. “In the beginning, I was making

*A roving FINCA sales team has set up its activities in the neighborhood of Quartier Jamaïque in Kinshasa, capital of the Democratic Republic of Congo.*

200 dollars, then 300 dollars, and then 500 dollars. I stayed there for a bit, at 500 dollars. Today, it is 700 dollars. Tomorrow it could go up to 1,000 dollars.”

As Diego talks of his ambition to open a second FINCA Express outlet, a steady stream of customers file in behind him to deposit or withdraw money over the wooden counter. One of them is 21-year old architectural student Justin Ngola, who has been a FINCA savings account customer for three months. He decided to save his money with the bank because he was robbed on the street of nearly 50 dollars. He does not share the old generation’s skepticism towards the banking system.

“The country is modernizing. The old ways aren’t here,” he says. “I just withdrew some money. It is so fast. I provide my account number, I press my finger, and immediately I get my money and I can go.”

By 3:30 pm, Bertho Kongolo and his FINCA marketing team have signed up 55 new customers under the marquee in Sakombi, and the chairs in front of them keep filling up with more new clients. “Every time we do a sales drive, more and more people come. They are very interested in financial services, both in loans and savings,” Kongolo says. “In general, people start accounts with just one dollar.”

Among those signing up for an account is 21-year old Grace Kalambayi. “I need to save about \$2,500, because I want to buy a car. That’s my plan,” she says. An ethnographic study published by the Partnership in 2017 found that the principal users of DFS in the DRC are the youth. The researchers found that the youth are attracted to the services due to the use of mobile phone grammar, its practicality and accessibility. The informal sector has also been quick to adopt DFS in the DRC, often citing the relative informality of agent banking a plus.

FINCA’s Kalonda believe that the DRC has only seen the beginning of the mobile money revolution yet. Following in FINCA’s footsteps, other financial institutions in the country are also going digital. She sees continued growth in demand for affordable, accessible and sustainable financial services. “FINCA loans can be as small as \$50, and we are thinking about introducing digital loans of \$5-10 because there is demand,” she says.

*A version of this story was first published in 2014.*

*This pharmacy is a FINCA agent next to a large outdoor market in Kinshasa, with some market traders coming in to bank as little as one dollar a day for safe-keeping.*



**Grace Kalambayi:**

“ I need to save about \$2,500 because I want to buy a car. That’s my plan.”



**Justin Ngola, student:**

*“It is so fast. I provide my account number, I press my finger, and immediately I get my money and I can go.”*



**Seraphine Mwemena Mule, street trader:**

*“Since I didn’t have a place to save my money, I decided to join FINCA, saving my money little by little, as my business progressed.”*



**Patrice Ginakubundi, street trader:**

*“I am saving for my children to study, and one day I might buy a piece of land.”*



**Diego Talani, FINCA agent:**

*“Since it has been going well with FINCA, I ended all other contracts I had before.”*

*Grace Kalambayi smiles as she talks of her hopes for the future, having just signed up for a FINCA account.*

8

# RISK MANAGEMENT

## New opportunities bring new risks

*Many DFS providers break novel ground when introducing mobile money and agent banking solutions to extend the reach of services and products to new user groups. This also brings new risks. Successful implementation of digital channels requires a refreshed look at existing and new risks, and a comprehensive risk management framework to guide operations.*

While all financial services providers will have existing risk management practices to safeguard their business, the introduction of digital financial services may require a reassessment of these policies and the introduction of new controls and risk monitoring systems. Certain characteristics of DFS, such as a dependence on rapidly changing technology and their ubiquitous nature, mean that new risks may be introduced, for example agent-level fraud. There is also a likelihood of an increase in existing risks or their severity, for example, in terms of dependency on the security of IT systems.

LAPO Microfinance Bank (LAPO MfB) is a leading national microfinance bank in Nigeria, and one of the first in the country to launch agent banking to significantly increase its reach beyond the current 3.2 million customers. It is a pro-poor financial institution committed to the social and economic empowerment of low-income households through provision of responsive financial services on a sustainable basis. The institution was established in the late 1980s as a non-governmental organization by managing director Godwin Ehigiamusoe, and in 2012 it obtained approval from the Central Bank of Nigeria to operate as a national microfinance bank.

As credit-driven organizations, microfinance institutions such as LAPO are generally well prepared to deal with credit risk. Many MFIs have worked for tens of years with the type of low-income, self-employed and rural populations that are now gaining broader access to financial services through DFS. As such, these institutions often have a nuanced understanding of the potential DFS user and the risk profile. Launching agent banking introduces a whole set of new risks, however, as the provider outsources client interactions and service provision to a network of agents instead of loan officers and branch staff.

While fraud is the most notorious and best understood risk associated with DFS, there are many others that providers are not always aware can be as damaging. These include strategic, regulatory, operational, technology, financial, political, agent management, reputational and partnership risks. Most importantly, all of these are often strongly related. Technology, strategic, and agent management risk can all lead to reputational risk, and fraud can incur even bigger financial losses from reputational damage than from the fraud itself.

As part of a two-year project to assist LAPO MfB in setting up its agent network, IFC provided risk management expertise that included the drafting of a risk assessment, creation of a risk register, developing a risk framework including mitigation strategies, and capacity building on using the register as an ongoing risk management tool.

As a first step, over the course of two weeks, the IFC team ran a series of workshops and individual interviews to identify the major risks facing LAPO MfB in its DFS strategy and implementation. The interactive exercise took advantage of senior management's and staff's institutional knowledge and day-to-day experience of the business, while leveraging the experience of IFC working with other institutions in the region and beyond. The LAPO MfB risk manager was heavily involved in all meetings and workshops to build capacity in meeting all different types of DFS risks, including strategic, technology, operational, financial and fraud risks, to work with senior management and the teams to design mitigation strategies, and to follow up to ensure these were put in place.

Project outputs included a detailed risk assessment and a risk register that the teams compiled together, to be used as a basis for a risk management action plan. IFC returned to LAPO MfB six months later to provide implementation support, including coaching of the risk manager and team. The workshops engaged the entire management team in often lively discussions, generating solid buy-in and collective ownership of the risk management implementation process, going forward.

Although a number of risks were identified, the key risk was related to IT, and it was deemed so significant that it could put a halt to all plans to launch agent banking and associated products in new markets. At the time of the risk assessment, challenges relating to the technology platform had already caused a delay in the launch of LAPO MfB's agent banking pilot. The risk exercise helped the LAPO team realize just how much an agent banking project depends on IT. Following the risk assessment, LAPO hired an independent firm to carry out an IT audit and gap analysis. The problem was not just the platform or the communication devices, but the organization of the IT department itself. LAPO resolved the issue by appointing dedicated staff within the IT department to work with its agent management team to address the technical challenges the agent banking implementation faced.

LAPO MfB's experience with IT risk is not unique. One of the key observations that the IFC DFS team has made, working with a broad set of clients in Sub-Saharan Africa and elsewhere over the past few years, is just how big an issue technology risk is in most DFS projects. The team has seen project implementation stall for 6-8 months for providers that have bought the technology before having completed the business plan, or that have bought inferior technology to keep down costs. It is often cumbersome and expensive to retrofit technology, and sometimes not even possible.

The IFC team has also found that, although most providers have extended their existing risk frameworks to include digital channels, there is only a nascent understanding of the additional risk that DFS bring. This is particularly the case for DFS deployments that bring organizations to engage in business activities outside of their core business, such as MNOs offering financial services through mobile wallets, or banks and MFIs partnering with MNOs to offer traditional banking products through new channels.

## Striking a balance between growth and risk

**By Patricia Mwangi**

*IFC Senior Operations Officer, Nairobi, Kenya*

Rally cars run three times faster than street cars, but have relatively fewer fatal accidents. The speed is not the issue, but how prepared the drivers are behind the steering wheel. Rally cars have much more comprehensive safety features, plus communication and navigation tools for faster decision-making. Similarly, as financial services providers accelerate growth and outreach with DFS, how smoothly they navigate this journey depends largely on how well they monitor and manage the new risks.

Digital channels introduce new risks, and may amplify existing risks. Until recently, banks connected directly with customers over-the-counter in a carefully managed relationship. With DFS, an outsourced agent network or a mobile app may be the bank's new face to the customer, and transmission of funds relies on digital network technology managed by a mobile network partner or Internet service provider. Key aspects of products and services are no longer solely controlled by the traditional provider, and partnerships bring a multitude of risks.

When the IFC team developed the DFS Risk Management Handbook, it was surprising how low DFS risk awareness was in the industry in general, and how poorly equipped many providers were in terms of risk mitigation strategies and tools. One provider openly stated that, by using agents, it had outsourced risk, not added new risk. A shift to DFS requires a parallel mindshift in risk management. DFS risk management teams are most effective when made up of people who are directly involved in managing the DFS operations, such as technology staff, channel managers, and sales teams. They have the greatest awareness of what is required and what should be included in the risk framework.

The biggest risk of all, however, is to not go digital.



## MARKET OVERVIEW

### Nigeria: A huge opportunity and many challenges

Nigeria is the seventh most populous country in the world and has the largest population in Africa. It is home to 190 million people, expected to double by 2050. The population is youthful, with half of all Nigerian adults under 35 years old. Although half of the population lives in urban areas, 70 percent of employment is in the agricultural sector. The primary source of income for nearly a fifth of all adults is from subsistence or commercial farming; and a further fifth from their own non-farming businesses. Only 4.2 percent of adults make most of their earnings in the formal sector. In 2016 Nigeria entered a recession, but the economy has since stabilized and growth has resumed. Due to falling commodity prices, oil revenues have not created the expected economic prosperity, and over half of all Nigerians are living below the poverty line. The currency, which is pegged to the US dollar, has depreciated substantially, and created a large black market for foreign exchange. In 2016, the Nigerian government re-pegged the Naira, relieving the pressure somewhat, but local businesses continue to struggle to buy dollars for foreign trade.

Access to finance is relatively high in urban areas, with two-thirds of city dwellers having access to some kind of formal service. Between 2014 and 2016, overall ownership of formal financial accounts grew by 1.5 million. However, access to finance did not keep pace with population growth. The number of financially excluded adults grew by 2.1 percent to 40.1 million in this period, while the number of microfinance bank clients declined by a third.<sup>1</sup> In addition, both non-bank financial institutions and informal sectors have shrunk in the last two years. Those most affected by financial exclusion tend to live predominantly in rural areas, particularly in the north of the country, and tend to be female, and younger.

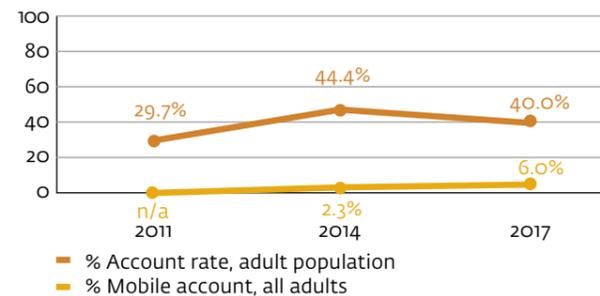
The slow uptake of DFS is principally due to the unforeseen consequences of the Central Bank of Nigeria's 'Guidelines on Mobile Money Services in Nigeria' published in 2009, which specifically excluded MNOs from providing mobile money.<sup>2</sup> Following an extended qualification process, licenses were issued to 24 companies ranging from small fintech start-ups to large retail banks.

Banks in Nigeria have begun to take advantage of agent banking regulations to launch low-cost bank accounts using agent networks, such as the Diamond Bank launch of Diamond Y'ello,<sup>3</sup> a low-cost bank account targeting the bottom of the pyramid, offered over the MTN mobile network. Third-party players are also rolling out new services, such as Interswitch, a large banking switch provider. It recently launched a financial inclusion division, which is rolling out an agent network and partnering with third parties/banks to provide loans by leveraging the data it collects. A number of fintechs have launched financial services, mainly as remittance service providers or lenders, such as the growing PAGA OTC bill payment business. It is projected that this market will continue to evolve.

A further regulatory development has been the implementation of biometric bank verification numbers, or BVN, to provide customers with enhanced security. It was introduced by CBN, but implementation was the responsibility of the banks. BVN registration is expensive and requires significant effort by banks, which have the dilemma of potentially making significant investment in clients that may move to their competitors. There are now about 32 million registered BVN users in Nigeria, although it is expected that financial institutions will struggle to register each of their customers and may be forced to close accounts.

The need for greater access to finance is clear. Of the 66 million Nigerian adults who save, less than half do so with a financial institution; one-third of Nigerians borrow money, but this is nearly all done informally. Supporting widespread availability of mobile wallets is specifically mentioned as a decisive factor in achieving Nigeria's 2030 sustainable development goals.<sup>4</sup> CBN is working on revised mobile money guidelines to improve uptake. The IMF estimates that a move to digital payments, and specifically mobile wallets, could save the Nigerian government between US\$ 5 to 9 billion, or about 1.7 percent of GDP whilst helping its citizens, and reducing corruption.

Overall financial inclusion rate vs mobile money account rate



World Bank, Findex

Any account ownership, adult population, 2017	40%
Any account ownership, women, 2017	27%
Any account ownership, young adults (15-24 years), 2017	33%
Financial institutions account, adults, 2017	39%
Mobile money account, adults, 2017	6%
Saved at a financial institution, adults, 2017	21%
Saved semi-formally, in a savings club or with person outside the family, adults, 2017	25%
Borrowed formally, from an institution or credit card, adults, 2017	5%
Borrowed from friends and family, adults, 2017	28%
Poverty rate, 2009	53.5%

GSMA

Unique mobile network subscribers, 2017	86.0 m
Mobile penetration rate, 2017	45%

Central Bank of Nigeria, AFSD, WAMZ

Volume of MM transactions, 2016	47,053,252
Value of MM transactions, 2016	2.10 b US\$ <sup>5</sup>
Registered mobile money users (wallets), 2016	20.5 m
Number of agents, 2016	18,228
Licensed banks, 2015	20
Bank branches, 2016	5,446
Total assets, 2016	99,412.41 m US\$

Mix Market

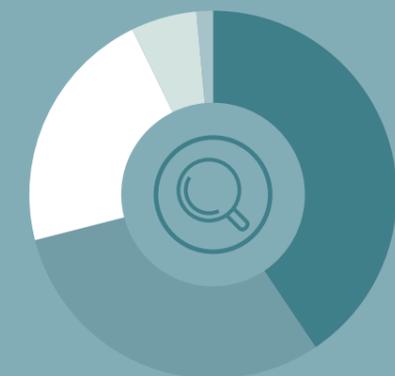
Licensed MFIs	-
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### Industry opinion:

*Which type of fraud do you currently experience as the biggest risk to DFS?*

While there have been a couple of well-publicized incidents of DFS fraud on the continent, most fraud experiences are not talked about publicly. While greater transparency in the industry may be helpful in mitigating incidences of fraud, an open discussion could also backfire. The impact of a known fraud against one provider can have consequences for the industry as a whole, discouraging customer trust in DFS.



Internal fraud	(41%)
Agent fraud	(30%)
Customer fraud	(22%)
Other	(6%)
Partner fraud	(1%)



## RESEARCH FOCUS

# The need for a DFS risk management framework

*The many opportunities provided by groundbreaking technology and innovative business models also bring new risks. The risks with DFS deployments extend far beyond operational and technical risks. In order for the financial inclusion industry to be able to build fully on the benefits of DFS, it is important that accompanying risks are understood and adequately addressed.*

Many financial services providers launch DFS deployments without a proper risk framework for DFS. Although most providers have extended their existing risk frameworks to include alternative channels, there is only a nascent understanding of the additional risk that DFS bring. This is particularly pertinent, as DFS deployments often mean that organizations engage in business activities outside of their core business, such as mobile network operators offering financial services through mobile wallets, or banks and MFIs partnering with MNOs to offer traditional banking products through new channels. In recent history, a few notable fraud cases have affected the reputation and financial viability of some operations. While fraud risk is the most notorious and best understood risk associated with DFS, there are many others that are not always incorporated in a provider's risk management framework, although they can be as damaging. These include: strategic, regulatory, operational, technology, financial, political, agent management, reputational, and partnership risks.

Risks do not fall strictly in one category. If a risk situation arises in one area, it can often create a risk situation in another area, and all risks must be considered together. For example, poor strategic decisions regarding the service

and the technology selection can lead to technology risk, which in turn leads to many other kinds of risk – such as operational and agent management risk if there are not appropriate back office systems, or fraud risk if the expected fraud prevention features are not delivered, or reputational risk if the customer experience is poor. Therefore, a strategic need to reduce fraud risk may also lead to a need for risk prevention measures in operations, technology, agent management, and so forth.

In order to successfully implement a DFS strategy, a standardized structure for building a risk management framework is required to support and sustain the operations. The process begins with establishing the context, including building the team and getting full buy-in from management and the board. The most important part of the framework development is the risk identification, evaluation, and treatment strategy development. A broad group of individuals with diverse backgrounds should participate in the risk identification process. Desk reviews, historical reviews, and reviews of current project aspects, can be used to tease out all the possible risks associated with the DFS implementation. Once identified, appropriate and consistent assessment methodologies can be used to assess and rank the priority of the risk identified. Development of treatment strategies includes deciding whether to tolerate, treat, transfer or terminate the risk, and to develop the appropriate strategy to do so. Once completed, the risk management framework can be monitored and reviewed. It is very important that the risk framework is a living document, and used to actively report on risk occurrence, as well as to be reviewed and updated periodically or upon occurrence of a major event.

There are some common lessons learned in the industry that all can learn from:

**1. Technology, strategic and agent management risks can all lead to reputational risk.** If customers cannot access their money when they need it, there is a potential reputational risk that can lead to reduced customer uptake, decreased activity rates, and dormant accounts: all of which will inflict potentially large losses on a provider as it cannot meet targets set out in its business plan. Thus, it is of utmost importance that the customer experience is seamless, with superior customer service and competitive pricing. Technology, strategic, and agent management risk

### Research question:

*How do DFS providers best deal with risk?*

**Data collected:** Interviews with over 30 practitioners, plus four in-depth risk assessments.

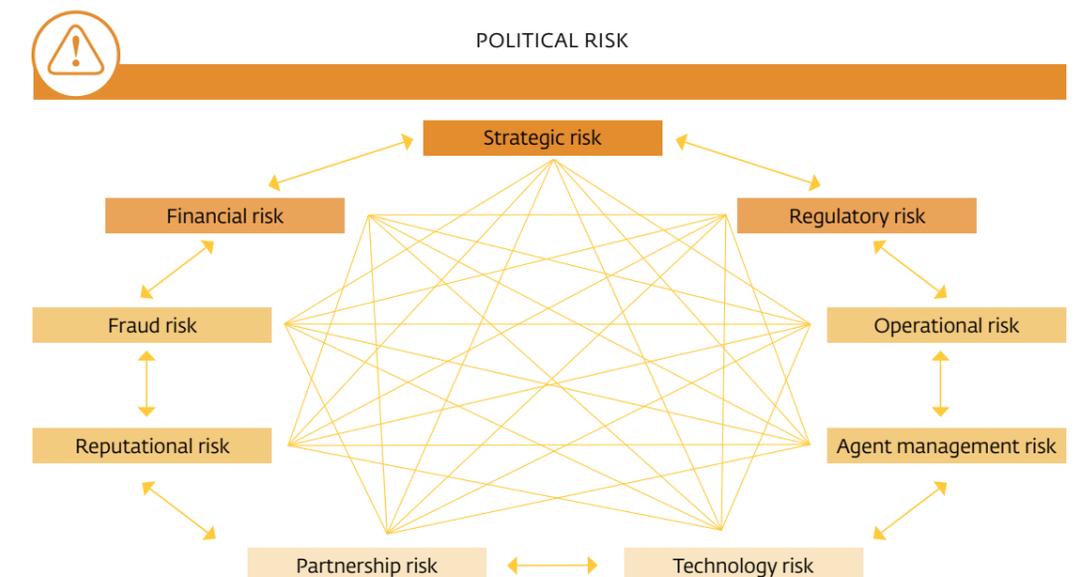
**Methodology:** Interviews and in the field observation.

**Primary conclusion:** DFS brings a multitude of new risks to a financial services provider, and may amplify existing risks. These are best addressed through an adequate risk management framework.

Framework for managing risk (based on ISO 31000)

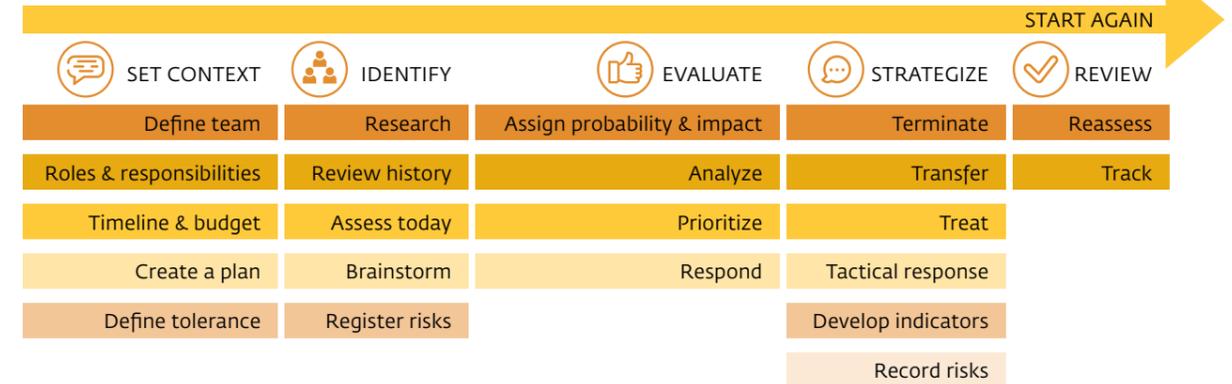


Risk Categories and Interactions





Risk assessment process



all play a role in providing a superior customer service, and include: products that meet the needs of the customers; pricing is competitive; well-staffed and well-trained call centers; accurate and timely SMS receipts; fees are easy to understand; agents are always available and liquid, to mention but a few.

**2. Fraud can have a huge impact on reputation.** Fraud can cause direct financial losses as a result of unauthorized withdrawal of funds or unauthorized creation of e-money. Moreover, the full impact of fraud can extend further. When made public, fraudulent activity is known to reduce consumer confidence in DFS, as well as core services of the provider, such as MNO voice or retail banking businesses. Consumer confidence issues can also spill over to other providers, and affect the market as a whole.

**3. Call centers are important.** The utility of the call center is wide-reaching, well beyond the primary goal of resolving the needs of customers. Call centers can be used for customer education, customer feedback, and improving the brand value of the institution. Call centers can also be used for risk management purposes by utilizing call center logs to identify potential risks to the DFS, as well as to monitor key risk indicators. Once issues are raised to a call center, institutions should aim to resolve the majority of them within the first call. Anything longer, or requirements for follow-up calls, will reduce trust in the service and have reputational risks and potential financial losses.

**4. Poor reconciliation and settlement processes leave institutions open to potential losses.** Settlement and reconciliation is a laborious process that can have significant impacts on operational costs, as well as reduce customer confidence, if transactions end up in suspense accounts

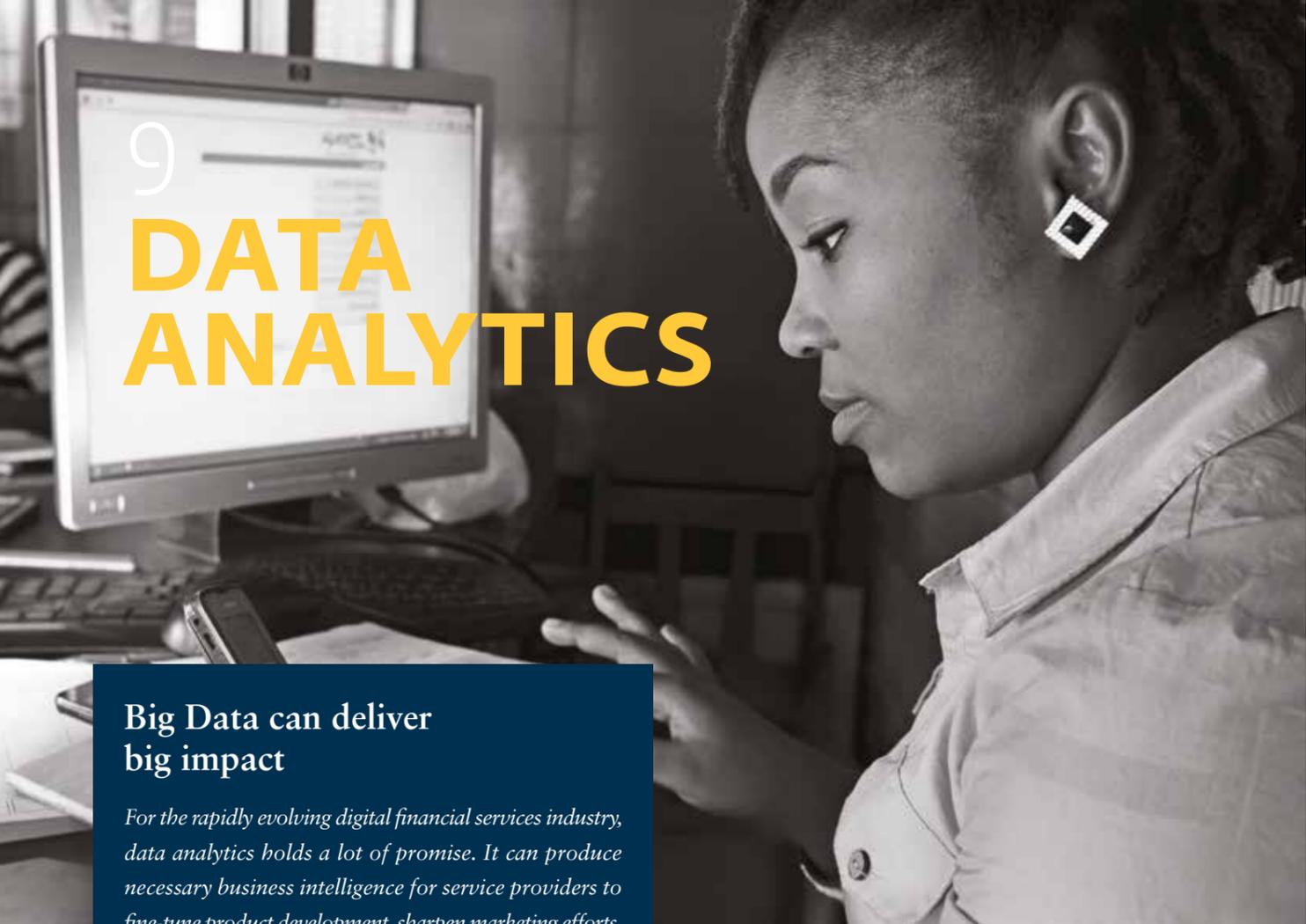
for significant periods of time. For example, refunds of debit without disbursement transactions can take up to one week, leaving customers frustrated and cash-strapped. Automatic, daily reconciliation is recommended, not only to reduce the numbers of suspense transactions, but also as a useful tool in early fraud detection.

**5. Choose partners carefully, and then hold them accountable.** Partners can refer to other providers that collaborate on joint products or services, or vendors that provide technology or agent management services, for example. All partnerships should be entered only after thorough due diligence and comprehensive discussions on roles and responsibilities. Partnership agreements can be in the form of contracts, memoranda of understanding between providers, or service level agreements with vendors. Well thought out agreements can go a long way in protecting an institution from unanticipated failure to deliver, or lack of compliance from partners. However, it is worth noting that agreements cannot always guarantee accountability. If the partner is very big and more powerful, you may not be able to hold it accountable, or if the partner is very small, it may simply not have the capacity to meet the requirements set out in the agreements.

Risk management is key to the overall success of DFS for financial inclusion. It has become apparent that what matters to one provider matters to all, as large cases of fraud, for example, affect not just consumer trust in one provider, but in the market and promise of digital financial inclusion as a whole.

**Further reading:** *Digital Financial Services and Risk Management Handbook*, by Lesley Denyes and Susie Lonie.

Nicholas Simkala, a businessman who owns six bakeries across Zambia and uses ZoonA several times a week, at an outlet in Lusaka, Zambia, on 9 January 2018.



# DATA ANALYTICS

## Big Data can deliver big impact

*For the rapidly evolving digital financial services industry, data analytics holds a lot of promise. It can produce necessary business intelligence for service providers to fine-tune product development, sharpen marketing efforts, and improve strategy to better reach the unbanked. Big Data analysis may be particularly useful to better target potential new users.*

Big Data is a big topic. Rarely a day passes without news of innovative applications of the data we all produce through our frequent use of technology. It is also increasingly recognized that effective analysis of large amounts of technology-generated data can support efforts promoting development. By the very nature of the business, the DFS industry produces a multitude of data that can be helpful in advancing its business goals and financial inclusion. Most DFS providers in Sub-Saharan Africa specifically target the previously unbanked – consumers the financial industry has previously known little about. MNOs are particularly well placed to leverage their data, producing large volumes of both call and transaction records that so far have been surprisingly underused.

To improve the understanding of existing and potential DFS users in Ghana, IFC and Tigo Cash collaborated on a Big Data project in 2014. Leveraging Tigo's mobile money transaction database and call-detail records, the project sought to answer questions such as: What characterizes active mobile money users? What drives inactivity? Is it possible to identify behavior patterns among customers

and to use that information to stimulate better uptake of the service? Is it possible to better target potential new customers that are more likely to be active DFS users? The overall objective of the project was to improve uptake and active usage of the service.

The study was based on six months of call detail records and mobile money transactions data, together nearly one terabyte in size. Users were segmented into three categories: 'voice only', 'registered but inactive mobile money', and 'active mobile money'. The results showed that these segments had very distinctive patterns of usage in terms of voice calls, social network structures and geographical mobility. Active DFS users, defined as customers who use digital financial services consistently at least once per month, made on average almost twice as many phone calls than customers not using mobile money, and these calls lasted significantly longer.

The same pattern was true for text messages: active mobile money users sent and received the most SMSes, followed by inactive mobile money users and then by non-users of DFS. Whilst active DFS users call and text their friends, families and business partners more often, they also have a much larger social network than other users, and these contacts are geographically more spread. Non-users of DFS seem to move around much less than active users, as evidenced by a lower number of cell towers picking up their phone signal.

Active DFS users moved around ten times more than voice-only users. Factors such as lifestyle and mobility between rural and urban areas, may account for this.

While more research is needed to better understand these customers and determine whether regular usage of mobile money increases usage of other services, it is clear that they constitute a specific and valuable customer segment that is geographically mobile and socially well connected. For example, it is possible that some customers have small businesses for which they use their DFS accounts, which could explain both a large network of contacts and high mobility.

The data analysis revealed a strong correlation between high usage of telecoms services and the potential to be an active, regular DFS user. The Big Data did not contain any socio-economic or demographic information, however, and to overcome this limitation, the project combined the Big Data analysis with classic market surveys. The surveys included age, gender, and education analysis, as well as income and key poverty index metrics. Tigo users represented all demographics, but tended to be more male; married; in their early 30s; high-school educated; and living in lower-middle tier housing.

The overall research showed that many telecoms-only customers had a demographic profile similar to highly active DFS users. The team therefore scored all telecoms subscribers according to the extent to which users are similar to the profile of highly active DFS users, using a model that captures some dominant usage variables to predict whether a subscriber is likely to become users of mobile money. Based on this predictive model, Tigo Cash was able to produce maps that identified areas of Ghana with the highest concentration of likely adopters and to concentrate marketing efforts there. The research identified 240,000 new users with a high propensity to become active DFS users, and 70,000 of them were converted to active users through the targeted marketing campaigns.

A couple of interesting general insights were also gained from the research. Whilst younger people are the most active users of voice services, for example, they also have the largest share of registered yet inactive DFS accounts. This suggests there is room for improvement of the services offered by DFS, since these mobile savvy younger customers are not being engaged by the current offering despite using their phones regularly for other reasons. The study also confirmed that DFS usage leads to loyalty and increased usage of same-brand services.

## Beautiful data, big and small

**By Soren Heitmann**

*IFC Operations Officer, Dakar, Senegal*

How much data has been created recently, compared to all recorded history before? Some form of this question arises frequently these days, often answered with a jaw-dropping statistic about the rapid growth of data and the new technologies that generate and store it. This trend gave rise to the term 'Big Data', which became a trend of its own. But the real question here isn't how much data exists or how fast it's growing. What's important to ask is: what do we do with the data?

Approaching data analytics from the perspective of a value-driven goal will help to focus the data conversation where it belongs: generating results that help organizations become more efficient, better engage users, and grow into new markets. It doesn't matter if it's big or small; fast or slow; alternative or traditional. Managers need not be concerned about whether their data is 'big' enough, or whatever tomorrow's trendy adjective may be. Organizations that want to become more data-driven must first understand and leverage the data that is already being generated.

Consider, for example, a dataset of customer addresses. This is small data; even a million customers fit into an Excel spreadsheet. And it is slow data, as subscriptions might only meaningfully grow on a monthly or quarterly basis. Yet, new data analytics methods and services can translate street addresses to precise coordinates that reveal density patterns – or permit visual segmentation by activity rates. Predictive analytics might even find patterns in sign-ups, helping to identify neighborhoods or regions that could be proactively engaged to help push financial inclusion.

Small, simple data that is already collected during regular operations offer numerous opportunities for better insights and operational value. The first step to becoming a more data-driven organization is simply deciding to get started.



## MARKET OVERVIEW

### Cameroon: Traditional informal financial services still strong

Owing to good agricultural conditions and modest oil reserves, Cameroon has one of the best-resourced primary economies in Sub-Saharan Africa. However, the population of 25 million face a number of challenges, including social unrest and rising unemployment, which is driving economic migration.<sup>1</sup> Urbanization is relatively high, with over half of the population living in cities. Agriculture is still the largest source of employment, occupying 70 percent of the labor force and contributing one-quarter of the GDP. The poverty rate is 24 percent, with the northern region particularly vulnerable to food insecurity.

Financial inclusion is very low, with just one in eight adults having an account with a formal financial institution. For historical reasons, trust in the formal financial sector is low, and between 2011 and 2014 financial inclusion fell by nearly a quarter to its current 11.4 percent. Despite various DFS initiatives, Cameroon is principally a cash economy, and the use of semi-formal credit unions and savings clubs is high. The most common form of saving and loans is provided by community groups known as *njangis* in anglophone Cameroon, or *tontines* in the francophone parts of the country, which are part of the informal sector. These rotating savings and credit associations (ROSCA) groups are very popular and generally formed based on common lifestyle factors such as business activities, ethnicity or gender. While mobile phones do play an important role in coordinating financial transactions within these groupings, they have historically been cash-based.<sup>2</sup>

Bank activity in DFS is currently somewhat limited, but is set to grow. Ecobank announced in 2017 that it would focus on digital channels to boost financial inclusion in Cameroon and elsewhere, by introducing an Internet banking service that uses a mobile app to facilitate in-store payments.<sup>3</sup> Later the same year, Société Générale Cameroun announced

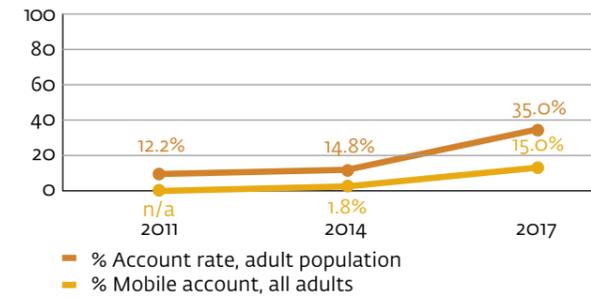
the introduction of a mobile banking service called YUP in Q1 2018. This service is currently available in several West African countries.<sup>4</sup>

There are four MNOs present in the country and an estimated 40 percent of the population has a mobile phone. The two main MNOs, Orange and MTN, provide mobile wallets targeting the unbanked, with Orange Money currently being the market leader. Both are offered in partnership with banks, which are required by law to provide e-money issuance and ensure regulatory compliance. Basic domestic remittance and bill payment services are offered. Following a slow start, these services are starting to gain traction and active customer numbers and services available are growing. Orange now provides an Orange Money app for smartphones. World Remit offers inbound international remittances that can be delivered to a bank account, mobile wallet, or received as an airtime top-up on MTN or Orange.<sup>5</sup> There are also several OTC money transfer services on offer, principally used for ‘sending money home’ from both domestic and international migrants, including a local and prolific service called Express Union. Some also offer bill payments. Technical limitations of the availability of MNO services in rural areas have been reported, leading to continued preference for OTC providers and credit unions.

Advans Cameroun is an MFI that has taken a new and innovative approach to DFS. To encourage savings, mobile cash collectors visit clients every day to collect deposits and use mobile phones to log transactions. In addition, there is a network of agent outlets offering cash in/out and account transfers used by both clients and cash collectors. Advans has also created a network of non-transacting agents responsible for administration such as client registration and loan request processing.<sup>6</sup>

Financial regulation in Cameroon is provided by the Banque des États de l’Afrique Central (BEAC), a regional regulator that has oversight of the six member states of CEMAC (Central African Economic and Monetary Community) that use a single currency. BEAC requires that only banks can issue e-money, and this limitation is thought to have restricted the growth of DFS in these markets. In 2017, BEAC issued a directive that prohibits mobile wallets operated by MNOs from participating in international remittances outside the CEMAC zone.<sup>7</sup>

Overall financial inclusion rate vs mobile money account rate



World Bank, Findex

Any account ownership, adult population, 2017	35%
Any account ownership, women, 2017	30%
Any account ownership, young adults (15-24 years), 2017	25%
Financial institutions account, adults, 2017	27%
Mobile money account, adults, 2017	15%
Saved at a financial institution, adults, 2017	11%
Saved semi-formally, in a savings club or with person outside the family, adults, 2017	32%
Borrowed formally, from an institution or credit card, adults, 2017	8%
Borrowed from friends and family, adults, 2017	33%
Poverty rate, 2014	24%

GSMA

Unique mobile network subscribers, 2017	9.7 m
Mobile penetration rate, 2017	40%

BEAC, AFSD

Volume of MM transactions, Jan-Sep 2017	135,694,110
Value of MM transactions, Jan-Sep 2017	4,210.1 m US\$ <sup>8</sup>
Registered mobile money users (wallets), Sep 2017	7,201,690
Number of agents, 2017	6,082
Licensed commercial banks, 2015	14
Bank branches, 2014	241
Total assets, 2015	7,779.19 m US\$

Mix Market

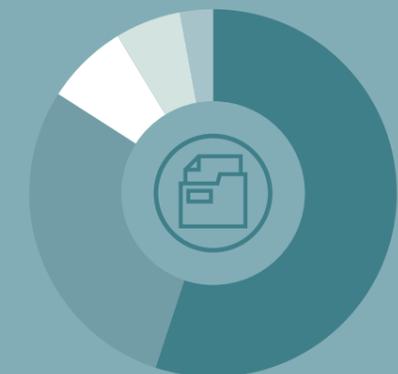
Licensed MFIs	32
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### Industry opinion:

*What constitutes the most useful data for DFS providers?*

Technology-enabled channels, products and processes generate hugely valuable data on user interaction that can also be linked to increasingly available pools of external data. The question for DFS providers is: how and what data can be leveraged for data insights to better meet user needs and to improve operations, services and products.



All of the above	(55%)
Transaction data	(29%)
KYC data	(7%)
Credit history data	(6%)
Call Detail Records (CDRs)	(3%)



## RESEARCH FOCUS

# How to deliver data-driven solutions for financial inclusion

*Data analytics is a crucial tool to support the evolving DFS market. It can help financial services providers to better understand their new customers, agents, partners, and their own businesses. The Data Handbook, produced by IFC and the Mastercard Foundation, provides practical guidance and support on how to apply data analytics to expand and improve the quality of financial inclusion.*

Data analysis can be used across the customer life cycle to gain a deeper understanding of users' needs and preferences. There are three broad applications for data in DFS: developing market insights, improving operational management and credit scoring. From an operations perspective, data help to automate processes and decision-making, allowing institutions to become scalable quickly and efficiently. Data also play an important role in monitoring performance and providing insights into how it can be improved. Finally, widespread Internet and mobile phone usage are sources of new data, which allow DFS providers to make more accurate risk assessments of previously excluded people who do not have formal financial histories to support loan applications.

Whatever the goal, a data-driven DFS provider has the ability to act based on evidence, rather than anecdotal observation. The increasing complexity and variety of data being produced has led to the development of new analytic tools and methods to exploit these data for insights.

Three case studies in the handbook illustrate applications for market insights and business strategy. Mobile network operators Tigo, Ghana and Airtel Uganda worked with IFC's Data Operations team to develop machine learning models that identify high-probability active mobile money customers from their telephone service subscriber base.

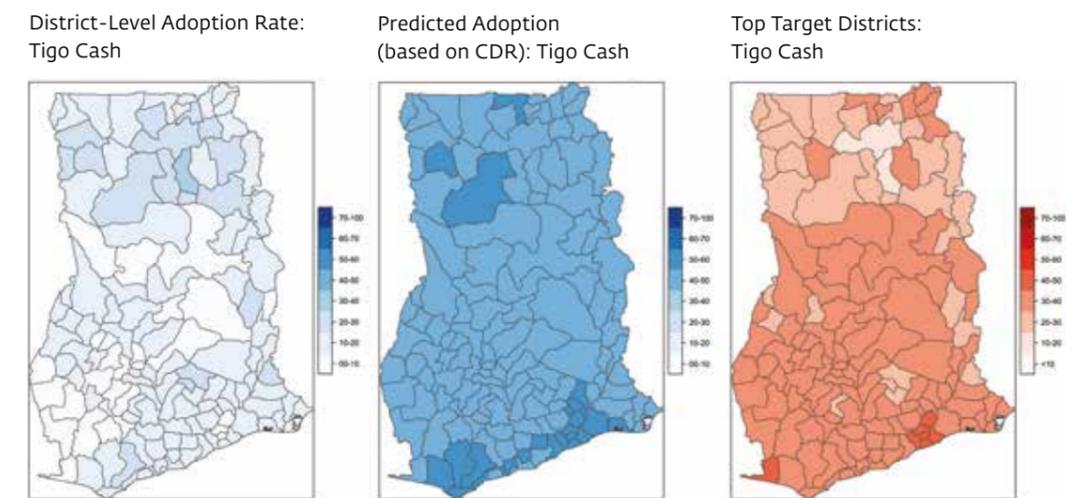
Models identify people who can benefit from mobile money services and are likely to become regular users. Such models enable smaller, less expensive marketing campaigns to yield better results. The Airtel model identified high-probability customers and predicted an additional US\$ 1.7 million annual revenue to the digital channel. And the Tigo model realized 70,000 additional active customers on the channel.

Market and customer insights are another way in which data analytics help to improve operational strategies. The handbook discusses how Zoono and Juntos employ analytics to successfully engage customers, and how to keep customers engaged to boost ongoing activity. Zoono analyzed three engagement strategies to ensure that a nationwide product launch would generate the highest uptake. The results found statistically significant differences across these pilots, which meant that Zoono was better able to motivate subscribers to transact. Juntos uses a technique known as randomized control trials, similar to analytic methods used in medicine, to identify top-performing customer engagement strategies. Here, customers are sent various messages that encourage them to interact with the service – and the reply rates are recorded and measured. Understanding which messages resonate with customers can help vendors to better interact with subscribers, thereby improving loyalty and reducing churn.

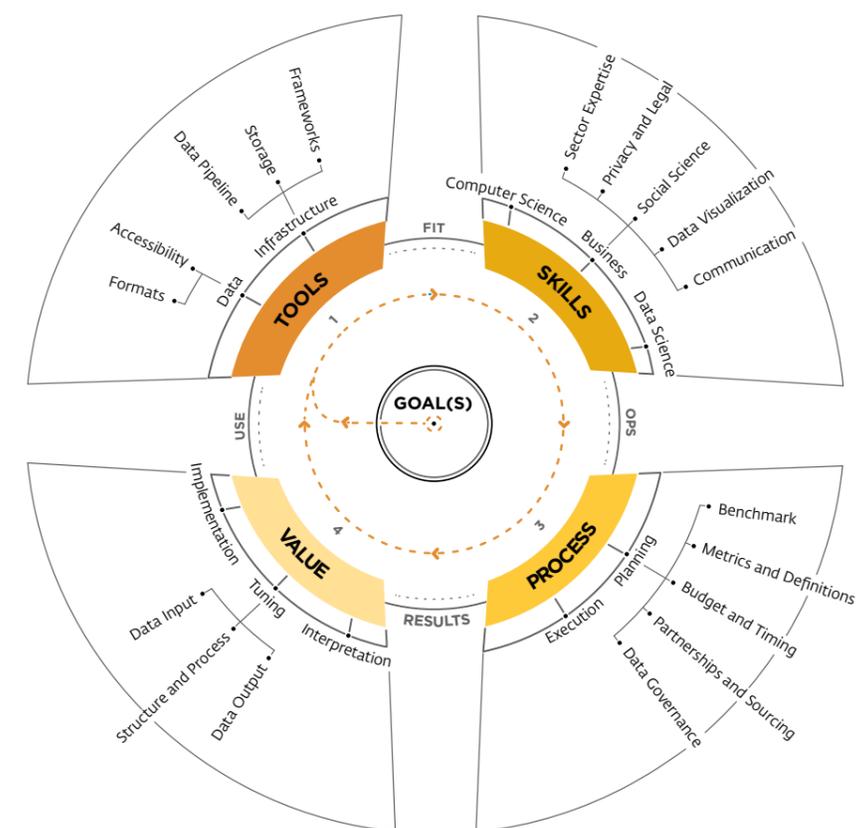
Data analytics can also improve operational performance and management. The handbook explores five cases, illustrating how data – both large and small data – can deliver key insights. Not all data-driven solutions need next-generation data science algorithms. Plenty can be done with the data companies work with every day. M-PESA, for example, used data from call centers to identify operational bottlenecks and generate key performance indicators that reduce customer wait times. Simple metrics can yield large gains for improved customer experience. The case of M-Kopa exemplifies how adopting a corporate culture that is open to being more data-driven helps to identify and engage opportunities. The M-Kopa experience shows that data can be used to guide nearly all operational areas from sales to marketing to customer service.

Traditional data analytics methods continue to be very valuable and easy to employ. IFC's applied research team worked with FINCA DRC to understand the determinants for successful agents using an econometric approach. The results helped to create scorecards used to onboard new

Current, Predicted and Top Districts of Mobile Money Usage



The Data Ring, a visual planning tool for data projects





Phillip Chellab, a banker, sending money to a friend, at a Zoonabank outlet in Lusaka, Zambia, on 10 January 2018.

agents that would realize better performance and reduce drop-out rates. Zoonabank also uses traditional survey and door-to-door data collection to improve agent placement and roll-out strategy. They maximize the value of this survey data by visualizing agents' locations on a map. Visualization such as this is a key element of using data for decision-making, and today can be done using readily-available tools, like Google Maps. Baobab (formerly MicroCred) developed interactive dashboards that can quickly visualize changes in transaction volumes, agent activity, and various other key performance indicators. At-a-glance data visualization helps operations to send alerts or engage customers or agents that are experiencing difficulties proactively, before bigger problems arise.

The Handbook takes a deep-dive look at data analytics applications for credit scoring, with four cases from M-Shwari, Tixaxa, Lenddo and First Access. These cases focus on how to implement credit scoring models and practical considerations for data products (see page 110 for more). It also provides a tool to help design and manage a data project, called the 'Data Ring', and identifies key risk areas and challenges specific to data projects. From the Handbook's exploration of case studies and project management, there are six overarching recommendations for successful data-driven deployments:

**Building a data-driven culture:** Institutional culture and support from senior management is critical. Management must openly advocate for teams to test norms and invest in developing skills. A Chief Data Officer or similar senior role helps to build an internal data culture.

**All data are good data:** Existing data already being generated by operations is the best place to start developing data-driven goals. Even 'small' data are useful, with powerful opportunities to create new key performance indicators or insights, once explored in greater detail.

**Using data visualization:** Visualization software and dashboard tools provide advances in graphing data that can show relationships and create at-a-glance 360-views of operations and customers.

**Data science is data art:** Creativity and artistic sensibility are key skillsets for data projects, whether helping to explore trends and patterns when developing predictive

models; or in producing dashboards that help translate the data visually, succinctly, and successfully.

**Global industry:** The field of data science is less than a decade old and is already pushing new products and services, creating new opportunities and uncertainties in established industries. The rate of change is still rapidly moving ahead, likely to disrupt and transform many markets and traditional services.

**Data for financial inclusion:** Focusing on digital financial services, the Handbook looks at how data-driven solutions will specifically create opportunities to reach underserved markets with new financial products and services. However, consumer protection and data privacy are especially critical when targeting segments where financial literacy – and data literacy – may be low or poorly understood.

The increased availability of data also presents challenges. The major challenge is how to leverage the utility of data while also ensuring people's privacy. A large proportion of newly available data are passively produced as a result of our interactions with digital services such as mobile phones, Internet searches, online purchases, and electronically stored transactions. Characteristics about individuals can be inferred from complex algorithms that make use of these data, made possible due to advances in analytical capability. Thus, privacy is further compromised by the fact that primary generators of data are unaware of the data they are generating and the ways in which they can be used. As such, companies and public sector stakeholders must put in place the appropriate safeguards to protect privacy. There must be clear policies and legal frameworks, both at national and international levels, that protect the producers of data from attacks by hackers and demands from governments, while also stimulating innovation in the use of data to improve products and services. At the institutional level as well, there should be clear policies that govern customer opt in and opt out for data usage, data mining, re-use of data by third parties, transfer, and dissemination.

**Further reading:** *Data Analytics and Digital Financial Services Handbook*, by Dean Caire, Leonardo Camiciotti, Soren Heitmann, Susie Lonie, Christian Racca, Minakshi Ramji, and Qiuyan Xu.

A close-up photograph of a woman's hands holding a smartphone. The phone is held horizontally, and the woman's fingers are visible on the screen. The background is blurred, showing a person in a light blue shirt and a red jacket, and a building with a red sign. The overall scene is outdoors, possibly at a market or a public service point.

# Data- driven decisions help Zoona agents thrive

*A smartphone in the hands of Susan Mwangi, a Zoona teller, in the booth she operates in Lusaka, Zambia, on 9 January 2018.*

*Data analytics is integral to how digital payments service provider Zoono has built its market-leading business in Zambia. Customer surveys, artificial intelligence, predictive modeling and agent dashboard portals all play a part in how the company plans to keep its edge.*

#### **Lusaka, Zambia.**

There is a problem in Ndola, a mining town in Eastern Zambia. With a cholera outbreak sweeping the country, local authorities are closing down street stalls and market vendors, churches and schools in an effort to control the spread of the disease. Several of Constance Sampa's Zoono booths – agent banking outlets that enable customers to make cash transfers, bill payments and to deposit money – have already been shut. Constance is on her cell phone, instructing one of her agents what to do next.

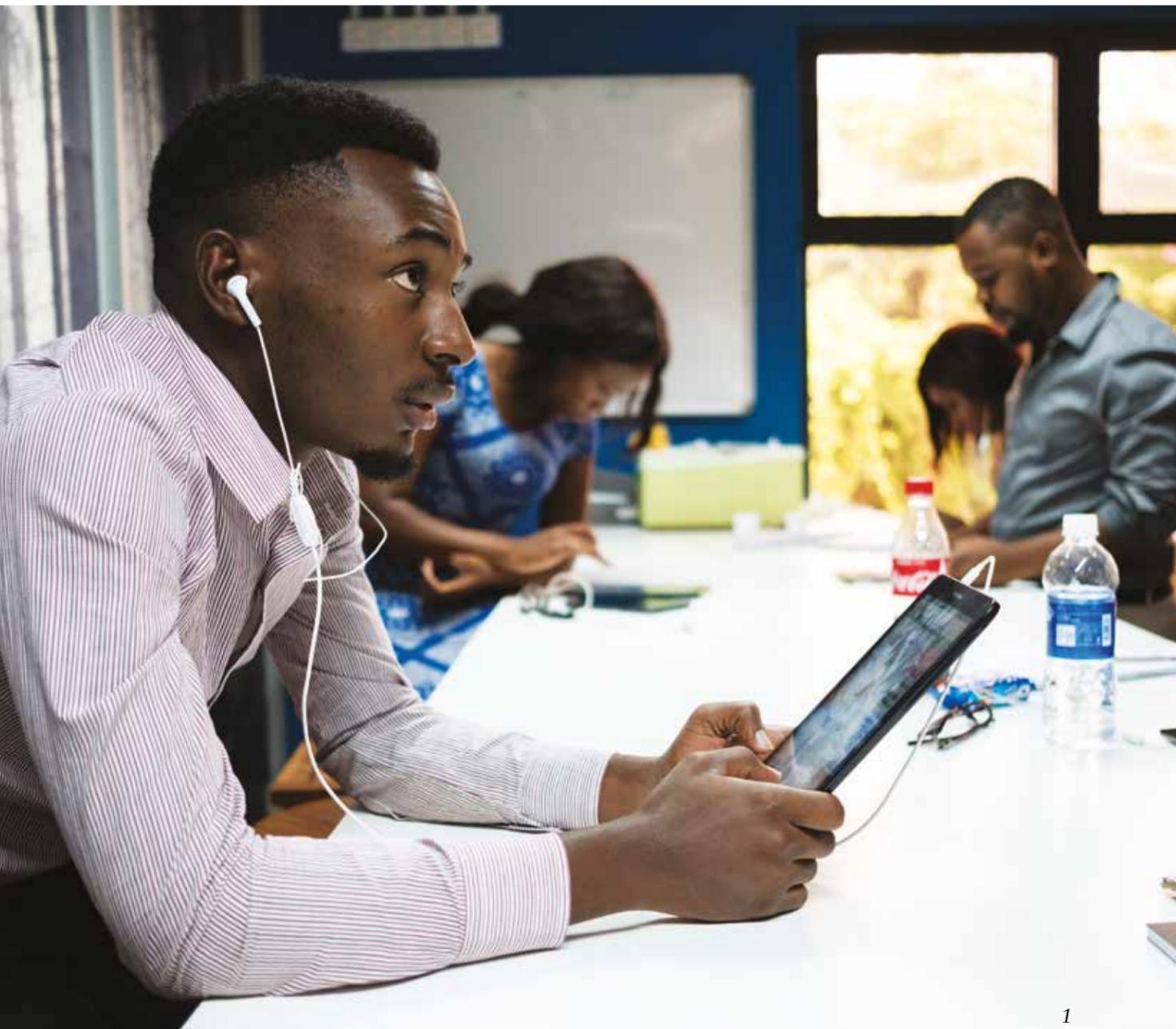
In her office, Constance logs onto the Zoono agent portal. The data gives her an easy overview of the effects of the cholera control program on her business. Several of her tellers in Ndola have not performed any transactions yet this day. Others are doing less business than usual. Income per outlet has tapered over the past week, forming an inverted J-curve on the headline revenue graph. Two years ago, Constance would have had to drive six hours from Lusaka to Ndola in order to discover this. Now, she can instantly track the situation and manage it with a few phone calls.

Constance started her career at Zoono, an interoperable mobile payments service provider, in 2011 as a teller in Zambia's Copperbelt region. The following year, after applying and going through a round of interviews, she took a position as a Zoono agent. "After that, I requested from Zoono if I could have my own business in my own name," says the 27-year old. "They agreed. I paid them 22,000 kwacha (about \$2,240) for the float and 11,000 kwacha (about \$1,120) for the booth in Chingola. That became my first outlet." Six years down the line, she owns 37 outlets and employs 47 people, almost all of them women.

At Zoono's head office in Cape Town, South Africa, lead product manager Samantha Berry explains the genesis behind the agent portal that Constance uses to monitor her business. "Initially, we just had a website for agents, where they could go to view their statements," says Berry. "Through various focus groups and forums with agents, we realized that there is a huge need for them to have a self-service portal and access to more data."

*Mercy Trinidad Lutepu, a Zoono agent who owns three outlets, in Lusaka, Zambia, on 10 January 2018.*





1



2



3



4

The new portal has brought an array of information. At any time, Constance, for example, can view the electronic balance of an outlet, the time of the first and last transactions, the number of transactions, the transaction value, and the revenue at any of her outlets. She can download the information in Excel format, and generate interactive graphics for some metrics. She can also view the ranking of each of her outlets vis-à-vis her other outlets. “This is also something we have found that the agents really like,” explains Berry.

The agent portal has cut down Constance’s administrative work by hours each week, and increased her ability to manage her company. Caesar Bukali, a Zoona agent who owns 14 outlets, says he uses the portal to closely monitor the patterns of revenue within his outlets. One teller has experienced a three-month slump, prompting Bukali to investigate further. There are two tellers working at the outlet, and the second teller has kept his revenue consistent over the same period of time. The data is suggesting a laggard employee. “Previously, I would have had to do spot checks, just physically show up, in order to find this out,” he says.

The portal is part of a broader data-focused mindset that is integral to Zoona’s business approach, taking the company from just a wild idea between two brothers in 2007 to a DFS business in Zambia, Malawi and Mozambique that has processed over US\$ 2 billion in transactions to date.

“We grew by being agile and responsive to customer needs,” says Zoona co-founder and Chief Operations Officer, Brad Magrath, sitting in the trendy Cape Town boardroom looking out at the exposed brick walls of an in-house coffee bar. “For us to be truly effective, we need to take customer insights and deliver customer solutions ten times faster than anyone else, or we are irrelevant.” Competing against MNOs with large existing client bases and infrastructure, speed to market is a key way Zoona has entrenched its market share. “So, it then becomes, how do you get the right customer insights, how do you turn those insights into action?” says Magrath. “And the easiest way to do that, is through good data-driven decisions.”

The company uses behavioral data as one way to segment and target its market. “We look at things such as how recently someone transacted, how much they spent, and current balance in the wallet,” explains Head of Marketing & Communications, Karim Amande. “Then we look at things such as age distribution, the value of money going in an out, what is driving activity, whether it is the result of acquisition or efforts, or whether the customer is buying

1. Interns conducting phone surveys with Zoona customers at the company’s office in Lusaka, Zambia.

2. A training session for prospective tellers at the Zoona Centre of Learning in Lusaka.

3. Edna Kasanda of Zoona during a team meeting with interns tasked with conducting phone surveys with Zoona customers.

4. A Zoona agent counting cash.

airtime, cashing in or out, receiving or sending money, or responding to a promotion.” Zoona uses this data to tailor its marketing efforts and refine its products. This has led to a variety of helpful insights, ranging from where to place a button on the Zoona app, to the fact that men respond better to certain kinds of discounts than women.

It was the process of using data to ‘listen to customers’ that gave birth to the Sunga Pocket, an affordable and accessible electronic account that allows users to store money, and deposit and withdraw it at Zoona agents. It was piloted in the mining town of Kabwe. “The product that went to Kabwe and that went nationwide were very, very different. And that’s okay with us,” says Kirsten Waeber, Head of Design Innovation at Zoona. “We believe our strength is in taking version one to market, learning a ton, and being able to get the best version of that out quicker than anyone else.”

Observing the way initial customers used Sunga, led to the most recent development of the product into an e-wallet, which is now available both as a smartphone app and an USSD-enabled product for basic and feature phones. “Essentially, we discovered that 35 percent of our Sunga users that had done more than three transactions were putting money in, taking money out, putting money in, taking money out. This lends itself more to a wallet than a kind of savings product,” Waeber explains.

In the afternoon sun, outside a Zoona outlet on Cairo Road in Zambia’s capital Lusaka, police officer Charity Mwangelwa underscores exactly this. “If maybe I’ve run out of fuel, I just take cash from Zoona and I pay,” she says.

The business case for mobile money in Zambia is strong, underpinned by a history of migrant labor linked to the mining economy. There are more than five million registered mobile money accounts in an adult population of 7.5 million people, and 106 million mobile money transactions took place in 2016. The agents are critical to this rapid expansion of financial inclusion, serving users with the necessary points of cash-in and cash-out that link the mobile money system to the still dominant cash economy.

At Zoona, “the focus is on how we can take these entrepreneurs on a journey where we actively help them grow from one outlet to ten, or more than twenty,” says marketing executive Amande.

To better understand the customer experience at agent level, Zoona runs a comprehensive quarterly survey that aims to interview at least three customers per outlet. With over

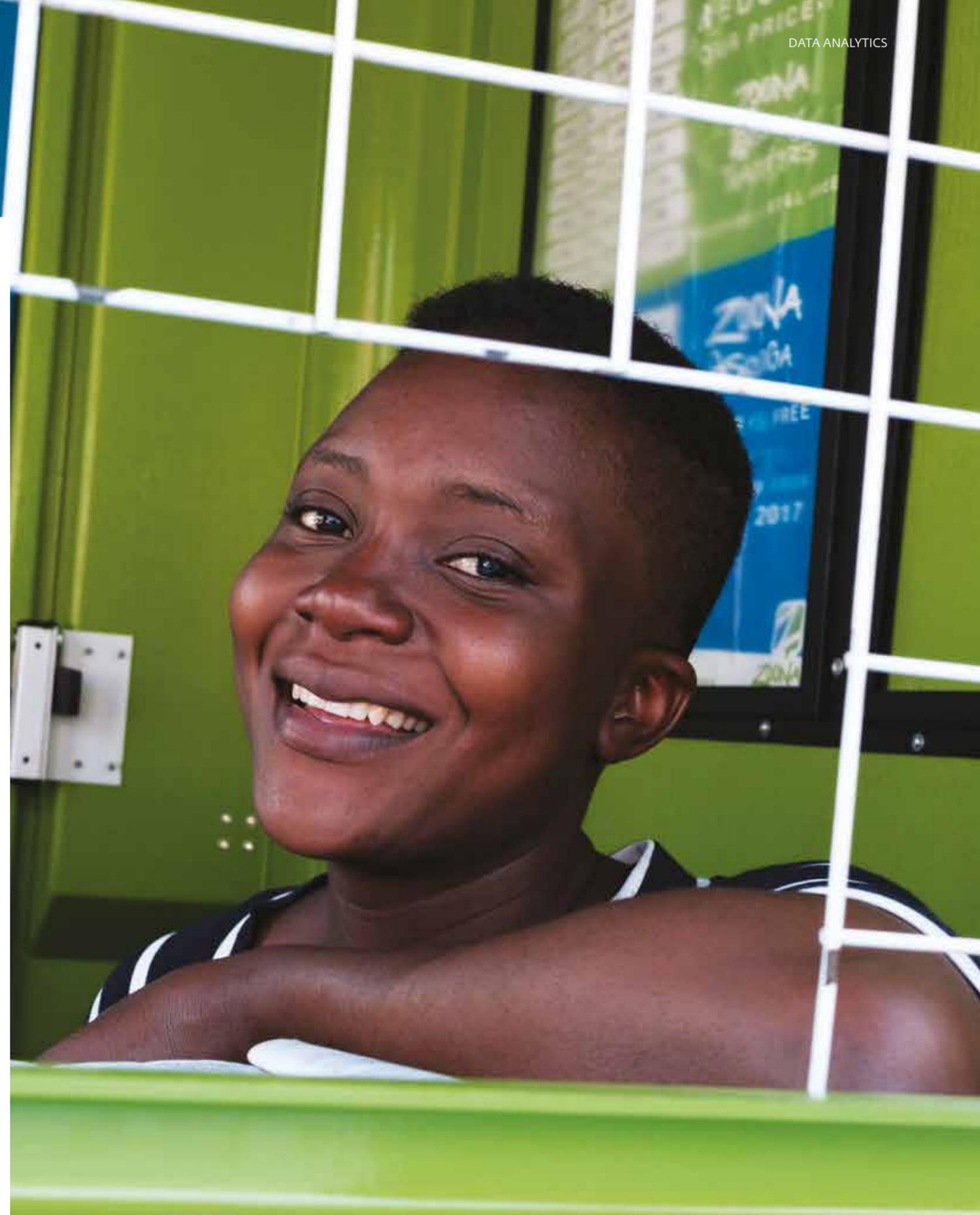
1,500 outlets in the country, the survey collects feedback from about 4,500 people. “We use structural equation modelling – an advanced multivariate statistical approach used to explore relationships between variables,” says Joseph Kuvor, Head of Customer Experience at Zoona. The information is used to score each outlet, with five stars the top score. Near the end of 2017, the company had identified 51 outlets that scored lower than four stars and rolled out a six-week training program to help improve the customer experience.

At the end of her working day, Constance Sampa tallies the outlet numbers, a task that has been considerably shortened by the agent portal. In a few hours she is able to track her revenue, ensure that her staff is performing, and that no fraud is taking place. “I love being able to say I’m an entrepreneur,” says Constance. “Zoona has taken me to nursing school, it has helped me build a house, and it has helped me get a new car, which I am currently learning how to drive.” She continues, “I’ve always had a heart of giving, and now I can employ others.”

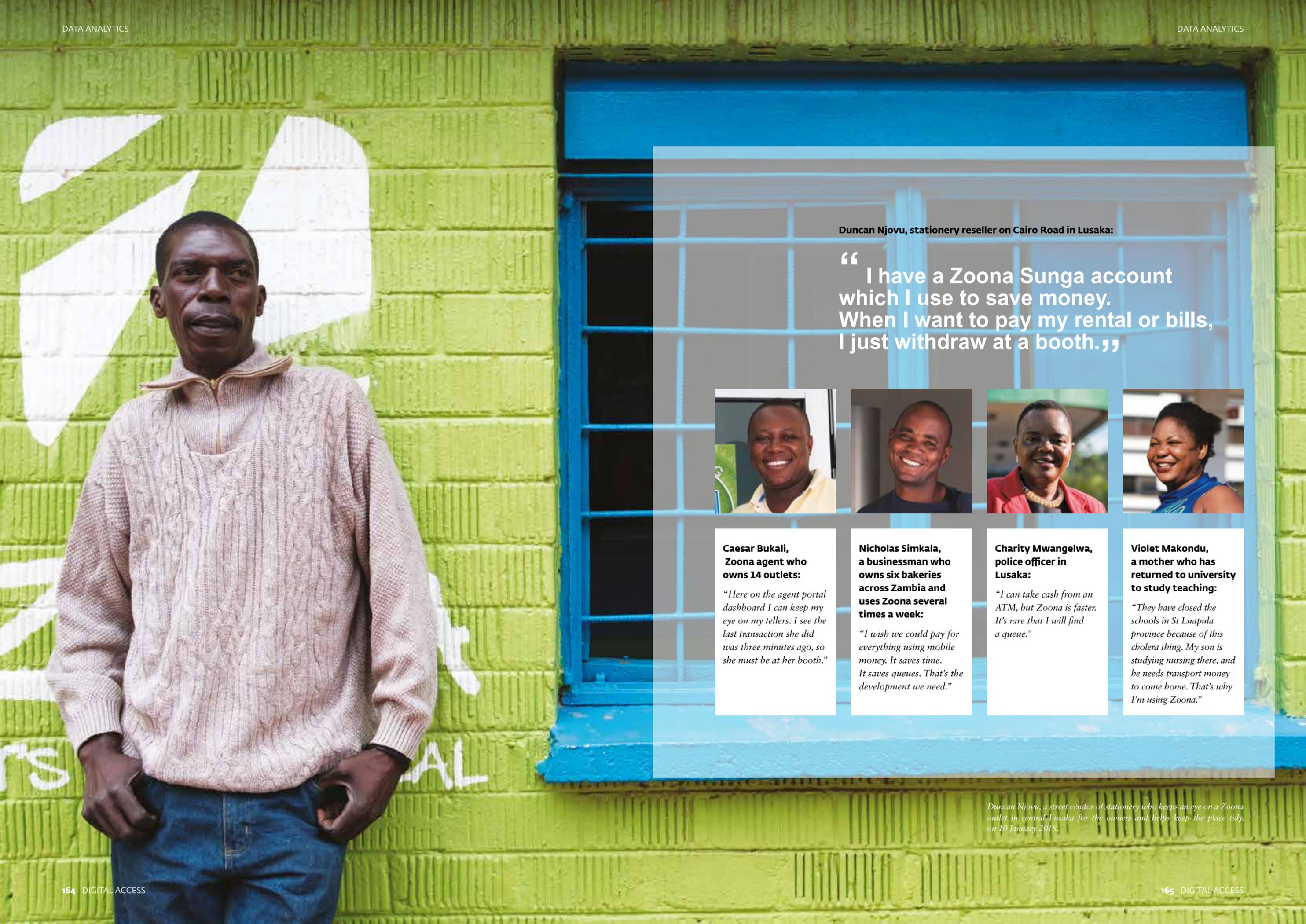
A new team at Zoona, headed by data scientist Alex Shabala, is using data in even more powerful ways. The team has developed a sophisticated revenue forecast model for Zoona that predicts how sensitive the revenue is to changes in agent network composition, for example. “We also look at saturation models. Given all the towns that we have outlets in, where should we be putting new ones to maximize growth and minimize the effect on the other outlets?”

They are using data to predict when is the most likely time that a customer might leave the service, so that Zoona can intervene and incentivize continued use. The team is also leveraging artificial intelligence to build things such as chat bots for a 24-hour customer self-service hotline, applying natural language processing. The interface will “interact with customers without them really knowing if there’s someone on the other side or not,” says Shabala.

It’s a step closer in the direction that co-founder Magrath hopes the business will move. “We’re starting to become a bit more predictive in our thinking,” he says. “But when we can be truly prescriptive, where we are almost leading through data as opposed to making decisions on data, then we can be truly effective.”



*Susan Mwango, a Zoona teller, in the booth she operates in Lusaka, Zambia, on 9 January 2018.*



**Duncan Njovu, stationery reseller on Cairo Road in Lusaka:**

“ I have a Zoon Sunga account which I use to save money. When I want to pay my rental or bills, I just withdraw at a booth.”



**Caesar Bukali, Zoon agent who owns 14 outlets:**

*“Here on the agent portal dashboard I can keep my eye on my tellers. I see the last transaction she did was three minutes ago, so she must be at her booth.”*



**Nicholas Simkala, a businessman who owns six bakeries across Zambia and uses Zoon several times a week:**

*“I wish we could pay for everything using mobile money. It saves time. It saves queues. That’s the development we need.”*



**Charity Mwangelwa, police officer in Lusaka:**

*“I can take cash from an ATM, but Zoon is faster. It’s rare that I will find a queue.”*



**Violet Makundu, a mother who has returned to university to study teaching:**

*“They have closed the schools in St Luapula province because of this cholera thing. My son is studying nursing there, and he needs transport money to come home. That’s why I’m using Zoon.”*

*Duncan Njovu, a street vendor of stationery who keeps an eye on a Zoon outlet in central Lusaka for the owners and helps keep the place tidy, on 10 January 2018.*

# AGRICULTURAL VALUE CHAINS

## DFS could be the key to banking small-scale farmers

*Small-scale farmers are often excluded from formal financial services because of the low and seasonal variation of income they have. In Côte d'Ivoire, many cocoa farmers also feel intimidated by the formality of banks and that "banks are not for them". They are, however, willing to adopt digital financial services, opening up possibilities to digitize the cocoa value chain.*

Côte d'Ivoire has the world's largest cocoa sector, producing over 1.4 million metric tons of raw cocoa per year, accounting for 32 percent of world production. Most of this cocoa is grown and harvested by approximately one million smallholder farmers, receiving an estimated \$2.3 billion of harvest income in total each year. Despite the large sums involved, nearly all of these payments are made in cash.

Cash payments pose a number of problems for farmers. Harvest payments often arrive late – due to the complex logistics of cash-based payments. Even if these middlemen do not take an outsized cut of farmers' payments, the cash is still subject to significant risk of theft whilst in transport. These factors mean that the costs of transporting cash are very high. In Uganda, where risks are similar, one analysis found that agricultural businesses were spending about 10 percent of annual operating budget on covering losses – from theft or fraud—and expenses related to insuring, securing, and transporting cash.

Cognizant of these costs and inefficiencies, many actors in the cocoa value chain are exploring alternatives. One such alternative is paying farmers through DFS. Taking advantage of recent technological developments, DFS can be used to enable a full suite of financial services to rural

and farmer communities through mobile, card-based, and other e-commerce products that can be accessed through agent networks in rural areas. Traditionally, farmers in Côte d'Ivoire have had only limited access to formal financial services. Only 10.3 percent of adults in rural areas have a bank account, and only 4.7 percent have a loan from a formal financial institution. Commodity traders such as Cargill and Olam are the main financiers of smallholder farmers, through input loans.

To explore the viability of using DFS to pay cocoa farmers, IFC designed a pilot project in collaboration with a tripartite partnership between SIB Attijariwafa Bank, Cargill and Orange Money to digitize quarterly premium cocoa payments to smallholder farmers through a bank-to-wallet channel. The model allowed farmers to receive payments for certified cocoa on their bank accounts, and then be able to transfer the money to their mobile wallets for cash-out at local agents, or to use electronically for mobile payments. The pilot also aimed at incentivizing savings and facilitating farmers' access to regulated credit providers. It aimed at enrolling 1,000 cocoa farmers on the new digital channel. IFC provided market research to better understand the financial lives of cocoa farmers (see Research Focus, page 170), help build the required multi-stakeholder partnership, design the service and put the process in place, and to provide technical assistance throughout implementation.

While there's a fairly wide usage of mobile phone services among cocoa farmers, as well as an evident willingness

to use DFS for payments, the pilot identified a number of critical challenges in digitizing the cocoa value chain in Côte d'Ivoire. First, farmers often lack the valid identification documentation required for KYC processes. Only just over half of the Ivorian population has a birth certificate or ID, and regulation does not allow for tiered KYC. This is a limiting factor for enrolling farmers to bank and mobile accounts, together with the difficulty of gathering farmers in one location for registration purposes. Second, poor digital infrastructure in rural areas constitute a considerable obstacle to rolling out DFS to reach smallholder farmers. This is especially important at the account opening phase, where there's a lack of digital tools to support the KYC process. Third, the partnerships often required to provide digital payments to farmers and rural populations necessitate not only strategic alignment between the market actors involved, but also an integration of the various systems of the partners, as any manual intervention slows down the process and opens up for human mistakes. Fourth, because of the seasonality of farming, it is challenging to design products that work equally for farmers, banks, MNOs, and agri-exporters. Finally, pricing of existing bank and mobile money products still often need to be adapted to farmers' seasonal income.

Despite these challenges, almost five hundred farmers opted to receive their cocoa payments through their bank to wallet linked accounts (approximately \$76,381 overall) during the pilot phase. It's also had considerable demonstration effect for existing partners and the market as a whole. In line with its ambition to have a fully transparent and credible supply chain, Cargill now aims to scale up and roll out digital payments to all its 100,000 cocoa farmers by the end of 2018.

Extending the use of DFS for rural and agriculture purposes could bring many benefits to the entire value chain and to the daily lives of farmers. Once a DFS ecosystem becomes well developed, DFS platforms could be used to link farmers with input suppliers and agricultural buyers, facilitating transactions between all three. Some of the more basic services that DFS could provide to farmers include faster payments for harvest and easier access to savings and lending products. Eventually, DFS could be used to facilitate the provision of crop insurance to farmers, helping them not only to manage risk and protect their investments, but also decreasing credit risk to lenders and expanding access to credit.

DFS has widespread potential applications for agriculture. DFS services can be linked through mobile technology to provide agricultural-extension services, sending farmers information and reminders on best practices, weather forecasts, and harvest calendars, as well as putting them in contact with horticulturalists. Additionally, at the value-chain level, the entire distribution network could be improved through e-warehousing, transportation management, and better traceability of produce or payments. Some players are harnessing the data being captured in these systems, and are using it to develop cash flow patterns and credit scoring for farmers in order to provide collateral-free lending.

## Finding the sweet spot in digitizing the cocoa value chain

**By Meritxell Martinez**

*IFC Operations Officer, Côte d'Ivoire*

There's a clear case for digitizing harvest payments to smallholder farmers. Around the world, payments for the produce that is the basis of agricultural production chains such as cocoa, coffee and cotton, are overwhelmingly in cash. Distributing large numbers of smaller amounts of cash to many recipients is difficult and expensive for commodity buyers, and receiving cash payments is equally risky and sometimes time-consuming and costly for farmers too.

The five hundred million farming households that are the foundation of agricultural value chains globally are largely unbanked. This is partly because financial services providers have traditionally viewed small-scale farmers as risky clients, and partly because of a sense of social exclusion. Research we did in Côte d'Ivoire showed that many cocoa farmers shied away from banks because they felt "banks were not for them". Two-thirds of respondents in our survey said they were "too poor" to have a bank account, while only 17 percent perceived themselves as "too poor" for a mobile money account.

Digital financial services could thus potentially serve as an entry point for broader financial inclusion of the farming community. The trick is how do we get there? There's no single formula, as yet. A survey IFC conducted recently, together with Strategic Impact Advisors, revealed over 60 such DFS implementations in more than 25 countries around the world. Some are mobile payments solutions, others are bank-to-wallet designs. Some link up with microfinance institutions, others with commodity traders.

DFS is a growing industry, and focus to date has been primarily on urban markets. The only way to find the best solution for smallholder farmers is by trial and error. The pilot we ran in Côte d'Ivoire, together with Société Ivoirienne de Banque, Cargill and Orange, allowed us to better understand the operational challenges of digitizing Ivorian cocoa farmers. Unless we keep trying, we won't be able to leverage DFS to extend financial inclusion to rural areas and along agricultural value chains where such solutions are much needed and will have the greatest impact.



## MARKET OVERVIEW

### Madagascar: One of the lowest financial inclusion rates in Africa

In recent years, Madagascar has experienced severe climatic changes and two political crises. This has slowed economic growth and caused food prices to rise. As a result, the population of 25 million lives in difficult conditions that have led to nearly three-quarters of the people now living below the poverty line.<sup>1</sup> In response to these difficulties, many people have shifted to a greater dependence on agriculture, with two-thirds of the population based in rural areas. Farming, fishing and forestry are the backbone of the economy, accounting for a quarter of the GDP. However, as the profitability of farming has declined, many have diversified to also engage in off-farm activities whenever they are available.

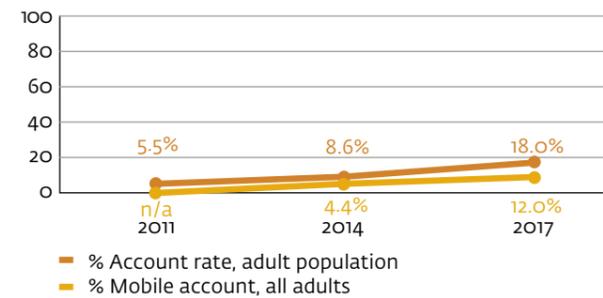
The financial sector is comprised of 11 banks, 7 other financial institutions and 29 MFIs. Only two banks have a strong presence outside of the capital, Antananarivo. Because of the country's instability, bad debt grew to 13.8 percent of gross loans in 2011.<sup>2</sup> However, the microfinance sector has seen good growth in recent years. The sector is made up of both banks that supply microfinance products and MFIs. Overall, the microfinance sector is healthy and growing steadily, although outreach in rural areas is more limited. Baobab (formerly MicroCred), a microfinance bank that focuses on the SME segment, introduced agent banking in 2015 using POS devices that were enabled for biometric identity verification. Building upon the successful agent network, a tailored nano-loan product called 'takka' has been developed, using automated credit-scoring, which can only be accessed at agent outlets. By partnering with Orange, Baobab can accept loan repayments and deposits directly from an Orange Money wallet, and agents can replenish their Baobab float using their Orange Money accounts. Despite regulatory constraints, the agents accounted for over half of Baobab's business by 2017, and the company is restructuring to make agents its primary

consumer channel.<sup>3</sup> Microfinance institution AccessBank has also launched an agent banking pilot and plans that agent activity should, in time, become a significant part of its business.

Usage of mobile phones is below the regional average, with fewer than six million unique subscribers, partly due to high prices. Prepaid minutes cost more than double the price in Kenya, for example. For those with phones, multi-SIM usage is common, with subscribers on average having 1.5 SIM cards. There are three MNOs and network coverage reaches about half of the population. Airtel is the largest with 42 percent market share (2014), followed by Telma at 33 percent, and Orange at 25 percent.<sup>4</sup> All MNOs offer mobile wallets but have been slow to convert registrations into active wallet users, although there may be signs that adoption is increasing. Most mobile wallet transactions are basic P2P transfers, airtime purchases and bill payments. In 2016, Madagascar became the second market in Africa, after Tanzania, to introduce interoperability between mobile money accounts. This allows P2P (domestic remittance) transactions to flow seamlessly between the customer wallets of all three MNOs. However interoperability is expensive, with transactions between MNO wallets costing several times the price of transactions within a single provider system. Data is not yet available about the impact this has had on DFS activity. In late 2017, MVola, the payments division of Telma, became the first mobile money service to launch a micro-savings and loan service, in partnership with BNI Madagascar Bank. Airtel established an alliance with Bank of Africa in 2013 for smallholder farmers to receive harvest payments into their wallets and open a BOA savings account linked to the wallet.<sup>5</sup> In a market where only 12 percent of the population has access to sanitation facilities or the associated plumbing, DFS is being used to support a program to introduce waterless flush toilets. Customers use mobile wallets to pay for waste collection, and SMS to confirm collection times.

Following a period of regulatory uncertainty, the central bank now requires that financial institutions intending to operate an agent network must set up a Banking Operations Intermediary and apply for a license. Following this, each agent must be vetted directly by the regulator, limiting the providers' ability to quickly reach scale. A number of agents that were operating before the new regulations came into effect have been closed for non-compliance to regulated standards.

Overall financial inclusion rate vs mobile money account rate



World Bank, Findex

Any account ownership, adult population, 2017	18%
Any account ownership, women, 2017	16%
Any account ownership, young adults (15-24 years), 2017	18%
Financial institutions account, adults, 2017	10%
Mobile money account, adults, 2017	12%
Saved at a financial institution, adults, 2017	4%
Saved semi-formally, in a savings club or with person outside the family, adults, 2017	4%
Borrowed formally, from an institution or credit card, adults, 2017	4%
Borrowed from friends and family, adults, 2017	37%
Poverty rate, 2012	77.8%

GSMA

Unique mobile network subscribers, 2017	5.9 m
Mobile penetration rate, 2017	23%

Banque Centrale Madagascar, IMF FAS, AFSD

Volume of MM transactions, 2015	28,728,048
Value of MM transactions, 2015	707.74 m US\$ <sup>6</sup>
Registered mobile money users (wallets), 2015	2,498,600
Number of agents, 2015	10,826
Licensed commercial banks, 2016	11
Bank branches, 2015	281
Total assets, 2015	2,393.38 m US\$

Mix Market

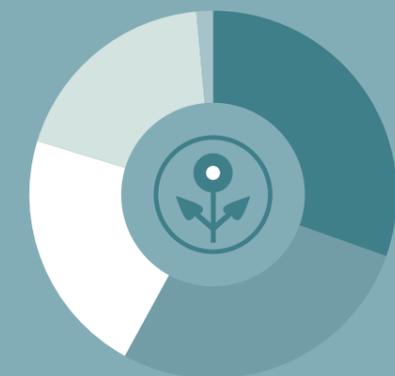
Licensed MFIs	17
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### Industry opinion:

*Where is the biggest challenge to banking smallholder farmers?*

Smallholder farmers have traditionally been excluded from formal financial services. DFS could be an opening to bring such rural communities into formal financial services, and also offer significant benefits for the buyers that smallholders are dependent on. It makes financial services more accessible for farmers, and helps to connect buyers and sellers more efficiently.



Rural agent networks	(30%)
Seasonality of agricultural income	(28%)
Access to farmers	(22%)
Data quality	(19%)
Creditworthiness of farmers	(1%)



## RESEARCH FOCUS

### Farmers who save fare better than others

*Managing income can be particularly challenging for farmers, since they typically receive most of their income during one or two harvests per year, but need to cover expenses throughout. Some farmers are better than others at stretching their income. Surprisingly, this financial acumen is not related to levels of income as much as the ability to save.*

Cocoa farmers in Côte d'Ivoire receive the majority of their income during the main harvest, supplemented by a smaller amount in the secondary harvest. This money must cover all expenses throughout the year, not only regular living expenses, but also planned irregular expenses, as well as any unexpected financial shocks. The weeks just before the main harvest are often referred to as the 'hunger season', because by then many farming families find that their funds have run out. For financial services providers looking to reach rural communities and smallholder farmers, it's important to understand the particular seasonal patterns that govern incomes and livelihoods of target users.

To better understand the cash flow challenges of Ivorian cocoa farmers and the ways that digital financial services could help alleviate some of the burden, the Partnership conducted research into the financial lives of cocoa farmers in 2015. It was based on a sample of 1,149 smallholder cocoa farmers, who were members of six agricultural cooperatives in the central region of the country. Farmers in the sample were interviewed with a detailed questionnaire that assessed their financial needs and behavior. While not representative of all Ivorian cocoa farmers, the sample provided a rich and detailed snapshot of farmers' individual financial behavior and demand for financial services.

In order to assess the extent to which farmers were able to make this income last throughout the year, the study asked them in what months of the year, if any, they typically have difficulty providing food for their families. Thirty-seven

percent of farmers in the sample reported having difficulty at least one month out of the year. By far the most common months in which farmers had difficulties feeding their families were those immediately preceding the primary harvest season (from July to September), with farmers reporting difficulties increasing dramatically from less than 1 percent at the height of the main cocoa harvest, to 27 percent during the two months directly preceding the main harvest. In fact, this is likely to be a conservative estimate of the percentage of farmers struggling with the 'hunger season': according to data collected by IFC in 2014 on another sample of Ivorian cocoa farmers, over 90 percent reported difficulty feeding their families before the harvest. This trend confirms that many cocoa farmers encounter significant difficulties budgeting incomes to stretch over an entire year.

One recurrent expense that causes farmers particular difficulty is paying for their children's schooling expenses. Of those farmers who reported borrowing money in the previous six months, 15 percent cited paying school expenses as the reason for needing this loan. Even though school fees are a perfectly predictable expense happening at the beginning of the school year (early October), they still cause farmers difficulty, because they require having a significant amount of cash on hand all at once, on top of regular household budgets, at the time of year when funds are running low. Costly seasonal agricultural inputs, such as fertilizer, also showed low take-up rates in the sample, which may in part be attributable to farmers' inability to make harvest income last through the planting season, when inputs are typically purchased. Farmers also have multiple lumpy medium-term expenses, such as weddings and festivals, many of which are predictable and ideally should be budgeted for in advance.

The study showed that a substantial minority of farmers save (35 percent), but the most common ways to do so are informal storage of money at home (36 percent), or in simple mobile money accounts operated by an MNO (20 percent). Only 20 percent of farmers had a remunerated savings account at a bank or other financial institution. Most farmers are only able to add to savings during a narrow window during the harvest. Of farmers who save, 90 percent only manage to put money aside once per year – or, if they do manage to add to their savings, the additional time is nearly always during the harvest. Only eight percent of savers reported putting away money regularly outside of the harvest season.

These savings seem to have a profound impact on farmers' ability to budget for the entire year. Farmers who save see

#### Research question:

*How may DFS be useful for smallholder cocoa farmers in Côte d'Ivoire?*

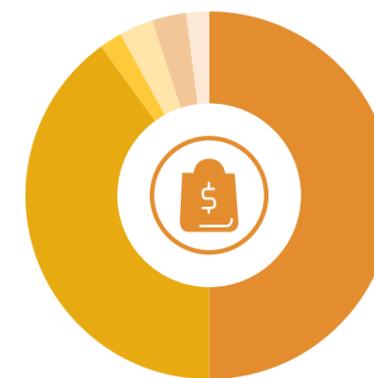
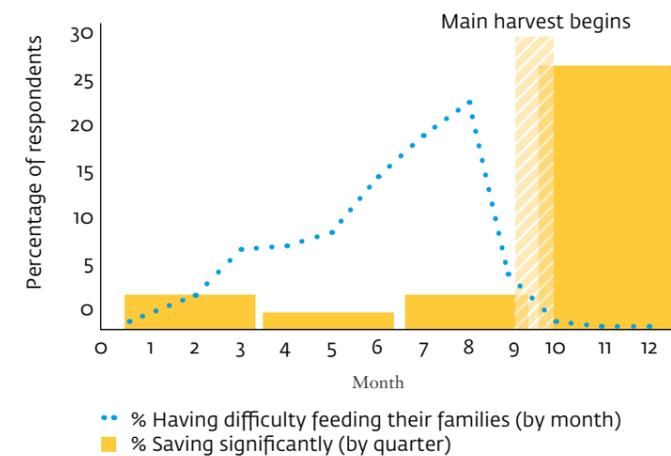
**Data collected:** The random sample included a total of 1,149 smallholder farmers from six cocoa cooperatives in central Côte d'Ivoire. The sample

included 7 percent women, while overall women membership in cooperatives is only 3 percent.

**Methodology:** Farmers in the sample were interviewed with a detailed questionnaire that assessed their financial needs and behavior

**Primary conclusion:** The traditional offering of financial products in Côte d'Ivoire is not well adapted to the needs of cocoa farmers, and DFS may be a key tool for extending rural financial inclusion.

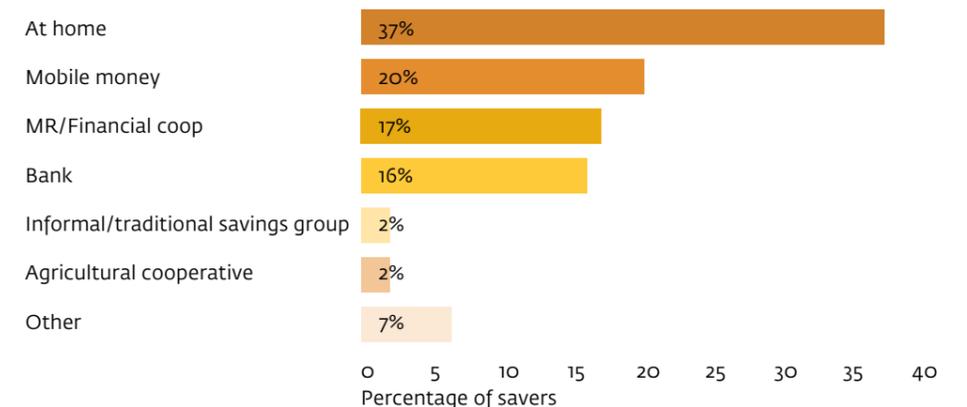
Cocoa farmers' seasonal savings and times with insufficient income for food

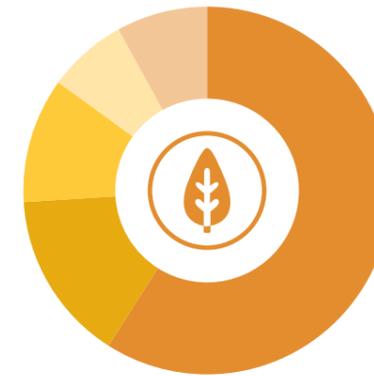


How frequently do cocoa farmers save?

During the harvest only	50%
Has not added to savings in 12 months	40%
Every 6 months	2%
Every 3 months	3%
Every month	3%
Other	2%

The places where cocoa farmers save their money

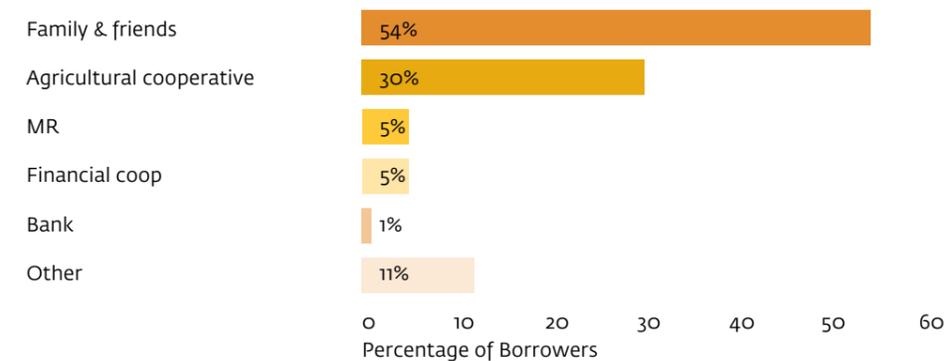




Reasons given by cocoa farmers for borrowing money

Emergency	59%
School fees	15%
Regular household expenses	11%
Pay farm tools or inputs	7%
Other	8%

The sources of loans for cocoa farmers



their odds of having difficulty feeding their families in the two months preceding the main harvest decrease by 50 percent, compared to those who do not save, even when holding other factors constant, such as education and household income. This means that even a poorer farmer who saves a little, stands a greater chance of feeding the family throughout the year, than a farmer who is better off but doesn't save at all. A farmer who saved in the past year had an 18 percent chance of experiencing difficulties, while this number increased to 31 percent for farmers who do not save. In other words, irregular incomes mean that it is essential for farmers to be able to set money aside securely to maintain basic consumption levels year-round. Additionally, farmers in the habit of saving are better able to budget for the entire year.

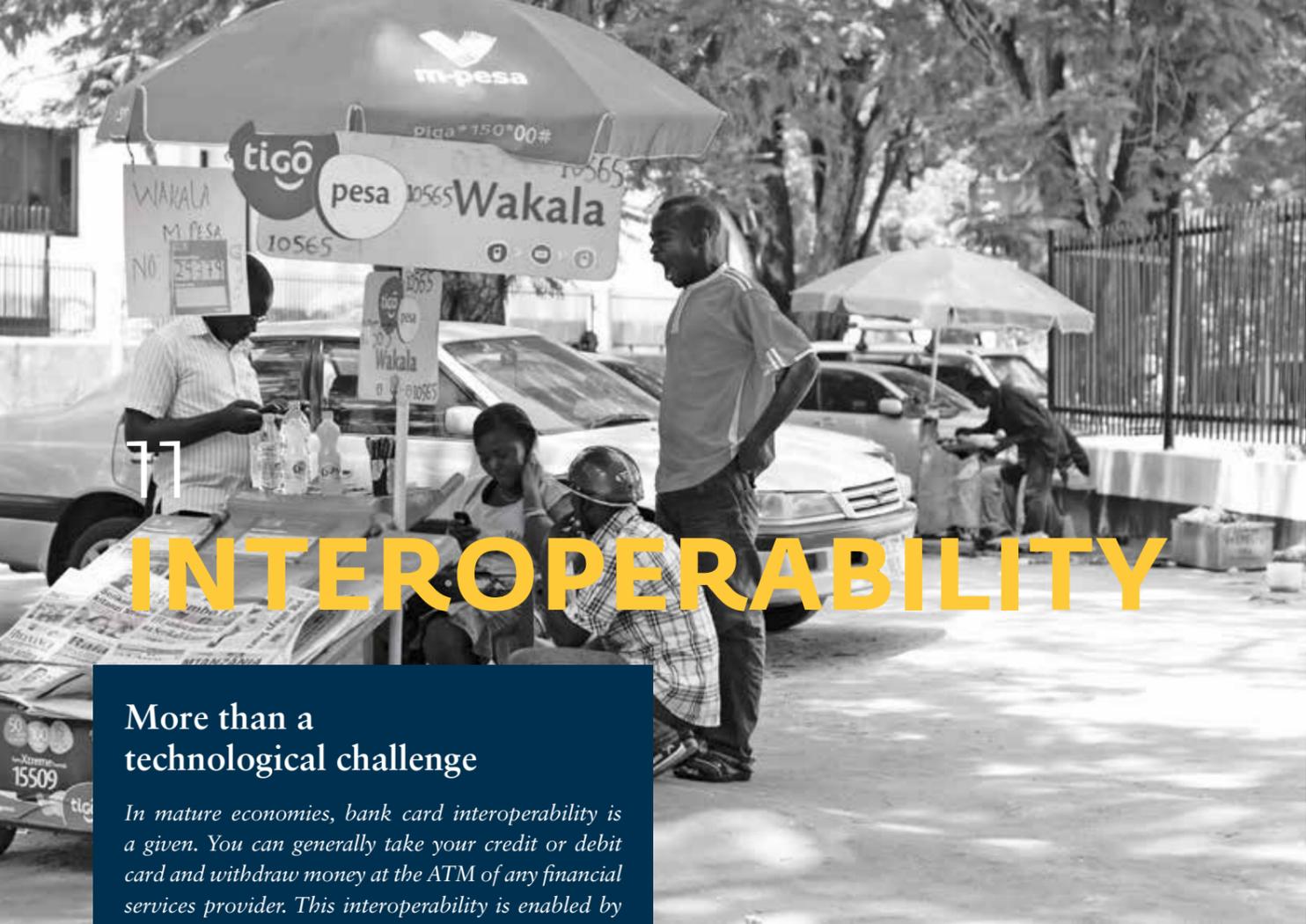
In addition to savings, some farmers also borrow as a means of managing medium-term budgets. Some farmers reported borrowing money (15 percent) – but, as with savings, this is done mainly informally, from friends and family (54 percent of borrowers), with only 11 percent of borrowers using a financial institution. These loans are more likely to be used to help with emergencies and regular household expenses (70 percent) than for planned events, such as buying agricultural inputs (7 percent) or school fees (15 percent). This reliance on borrowing to fund regular household

expenses is also concentrated in the time immediately preceding the main harvest, when many of them experience financial difficulties. The more difficulties farmers face before the harvest, the more likelihood they will borrow. In summary, some farmers are using credit as a substitute for medium-term savings, financing regular household expenses on credit to make up for their inability to set aside enough of the harvest income to last the entire year.

The study indicates that encouraging good financial practices, by providing easily accessible remunerated savings, and enabling the associated credit scoring to support formal lending, would be of great benefit to many cocoa farmers. These services are more likely to have high adoption levels if they are delivered by DFS, because of convenience, acceptance, and the current widespread usage of DFS by farmers for more basic transactions. Farmers' willingness to try new kinds of financial services as alternatives to cash was well demonstrated, with an overwhelming majority (73 percent) responding that they would like it if their cooperative paid them for the harvest digitally.

**Further reading:** *Opportunities for Digital Financial Services in the Cocoa Value Chain in Côte d'Ivoire*, by Susie Lonie, Meritxell Martinez, Rita Oulai and Christopher Tullis.

Recently harvested cocoa beans, placed in the sun to dry before processing. Cote d'Ivoire.



# INTEROPERABILITY

## More than a technological challenge

*In mature economies, bank card interoperability is a given. You can generally take your credit or debit card and withdraw money at the ATM of any financial services provider. This interoperability is enabled by global payment schemes or standards and facilitated by switching platforms or technology. When it comes to digital financial services, interoperability is still in its infancy. In Tanzania, IFC worked with major industry players to establish one of the first industry-led standards for mobile money interoperability.*

Mobile money interoperability allows users of different mobile financial services providers to interact with each other, for example, by making direct payments from the mobile money wallet of one provider to the mobile money wallet of another provider. It can benefit consumers and businesses and contribute to increased financial inclusion. In recent years, various development organizations, industry bodies, regulators and markets have embarked on enabling mobile money interoperability between digital financial services providers in different markets across the globe.

There are different routes to interoperability. On a technical level, it can be enabled by a switch. However, simply setting up a switch that connects the payments systems of different providers doesn't necessarily lead to more transactions between the various services in the market. Generally, a switch needs to be supplemented by a scheme between industry actors that governs the rules and processes of interoperable transactions. Such schemes cover additional business considerations, such as participation criteria, voting rules, settlement processes, flow of funds between parties, and dispute resolution. A scheme can be set by the regulator, or negotiated by the industry.

Tanzania is one of the most advanced DFS markets in Sub-Saharan Africa. Already in 2012, there were over nine million mobile money subscribers – making Tanzania the second country in Sub-Saharan Africa, after Kenya, with such a high rate of mobile money adoption. Contrary to the Kenyan market, the Tanzanian DFS market is characterized by competition between a handful of similar-sized mobile money providers. At that time, the Bank of Tanzania was working on a new mobile payments law planned for early 2013 and was examining the potential for DFS interoperability and the various options for bringing this about. It was becoming apparent that without interoperability, the emerging DFS market was likely to stagnate and the recent expansion in financial inclusion risked tapering off.

In September 2013, IFC stepped in to facilitate an industry-led consultative process, with the aim to create a set of interoperable standards and rules for a DFS scheme covering at least four transaction sets. The project was subsequently extended for another year to include a nationwide marketing campaign targeting one million people, as well as the development of a generic set of standards for DFS interoperability for application in any market. The project was supported by the Bill & Melinda Gates Foundation, the Financial Sector Deepening Trust, and Bank of Tanzania.

As a neutral broker, IFC's role was to provide technical expertise for the discussions, maintain a spirit of cooperation between participating institutions, and sustain momentum. Since the participants around the negotiating table were competing market actors, the last two objectives

were sometimes challenging. The group consisted of two banks and four MNOs, who viewed payments very differently. Disagreements were common and could have stalled the process indefinitely.

To manage this, IFC focused on fostering cooperation and mutual understanding by holding monthly meetings to discuss and agree on specific aspects of the rules. One step at a time. These were often lengthy and very detailed discussions that would typically end in a consensus vote based on the rule of one-person-one-vote, so that larger providers could not unfairly influence the outcome. Once agreement was reached, the IFC team would draft the document for the participants to review and sign off. The process ensured that everyone's input was considered and that an agreed course of action was established at the end of each meeting.

In addition to building consensus, it was a challenge to determine which use cases to start with. Banks, for instance, were more interested in bank-to-wallet transfers, whereas mobile network operators were interested in wallet-to-wallet transactions and other use cases. To help prioritize, the IFC commissioned a market study in March 2014 to determine the demand amongst customers and agents and to identify the main pain points. Ninety percent of those surveyed said they would like to be able to send e-money to someone on another network, and 50 percent of these respondents said they would be willing to pay for such a service. This helped make the case for a first set of standards for person-to-person/wallet-to-wallet transactions.

The first use case that the industry reached agreement on was for person-to-person/wallet-to-wallet transactions, and was signed by Tigo and Airtel on inception, joined by Zantel shortly after, and joined by Vodacom in February 2015. Following the initial use case, the industry negotiations continued, with the aim to reach agreement on cash-in and cash-out services, agent-to-agent or float rebalancing transactions, and bulk payments. There has been clear impact on the market. As of September 2017, the Bank of Tanzania reported that the number of interoperable transfers had grown exponentially, from 174,000 transactions in October 2014 to over 6.9 million transactions. In terms of value, these transfers have now reached over \$90 million per month. Interoperable P2P transactions now account for about 28 percent (almost a third) of all P2P transactions.

Negotiating interoperability is a complex process and other markets can learn from Tanzania. Allowing the industry to lead the process, and to determine the pace and priorities of the process, ensures critical buy-in from the outset. Regulator-led interoperability processes run the risk of meeting industry opposition, and technical solutions do not by themselves necessarily lead to interoperable transactions. To help maintain momentum and interest it helps to identify a strong industry champion, and a neutral broker is best placed to manage the process. It is important to stake out a course for the negotiations from the start, but also to be flexible and to proceed incrementally. Start where there is consensus.

*Example rules for all DFS use cases, drafted by the IFC team to support regulators and the industry, are available online at [www.ifc.org/financialinclusionafrica](http://www.ifc.org/financialinclusionafrica)*

## Why the industry should take the lead

**By Omoneka Musa**

*IFC Operations Officer, Nairobi, Kenya*

When the industry partners signed the first cooperation agreement for DFS interoperability in Tanzania, it was the result of almost two years' hard work on the part of everyone involved. The journey the industry took was very similar to that of banks in the US in the 1950s, resulting in the creation of the international card schemes that are ubiquitous today. Both processes show us that, when a clear business case exists, industry players can organize themselves effectively to create structures, standards and rules that benefit society as a whole.

It is often the belief of regulators that, unless interoperability is mandated, the industry will be slow to act or will not act in the public interest. Where economic incentives are poorly understood, however, regulatory mandates can be ineffective at best, and harmful at worst. The well-known case of e-Zwich in Ghana is a cautionary tale about the distortionary effects mandated interoperability can have. Following the launch of this interoperable, card-issuing interbank payment platform, at the time wholly owned by the central bank, only 10 percent of cards were issued and usage was extremely low. Where industry actors have been allowed to determine interoperability standards, higher rates of adoption and usage are observed.

This doesn't mean that there's no place for regulation. In the case of Tanzania, the industry leaders sought and obtained the official backing of the Bank of Tanzania beforehand and continually consulted with the regulator as rules were being formulated. There are other tools, besides regulation and law, that can be employed to successfully promote DFS interoperability: support industry associations, advise the industry, provide guidelines, and foster dialogue and open exchange. The future may well offer more effective industry-led attempts at interoperability that are aligned with the public interest.



## MARKET OVERVIEW

### Tanzania: A market characterized by competition and collaboration

Tanzania is home to 55 million people, with a predominantly rural economy dependent on an agricultural sector that employs over two-thirds of the workforce. Most farmers are self-employed, with around 80 percent of the cultivated land worked by smallholders. Urbanization is low, at 33 percent, and the dispersed population provides a number of challenges to financial services gaining critical mass. The government has an ambitious development agenda, including access to finance, which it is hoped will reduce the high poverty level. Nearly half of the population lived below the poverty line in 2016.

The Tanzanian financial sector is fragmented, involving over 50 banking institutions of various types, as well as over 100 MFIs and 5,500 SACCOs. However, the top three commercial banks account for nearly half the country's banking assets.<sup>1</sup> The use of banks has declined in recent years, in terms of both individual account holders and active accounts.<sup>2</sup> This appears to be coupled with a move toward mobile money usage. A number of banks seeking to reverse this trend now offer mobile banking, and several have agent banking services.

By 2015, consumer awareness of mobile money was 95 percent and 63 percent of adults had used it. Mobile phone ownership is relatively high, at 79 percent, and most Tanzanians have access to a mobile phone. Smartphone penetration is growing, and even in 2015 there were nearly as many feature phones/smartphones (44 percent) as basic phones. In March 2017, the top three MNOs – Vodacom, Tigo and Airtel – accounted for 86 percent of subscribers, and most of the mobile money share with M-PESA (Vodacom) the market leader. Halotel was a new entrant in 2015, with a focus on rural areas, but after early success its impact has been small.

The DFS market in Tanzania, with its more competitive market structure, has grown to rival neighboring Kenya.

The services on offer are increasingly sophisticated and uptake is good. By 2015 almost half the users were engaged in P2P transfers for both personal and business transactions, and 32 percent were undertaking advanced activities, such as remunerated savings and loans. For example, three years after the launch of M-Pawa in 2014, by Vodacom in partnership with the Commercial Bank of Africa, the service had over 5 million customers and issued around 350,000 micro-loans per month. The same year, Tigo started paying quarterly bonuses to customers based on the balances held in their Tigo Pesa wallets. The central bank now requires all mobile money services to provide a profit share from the trust account holdings.

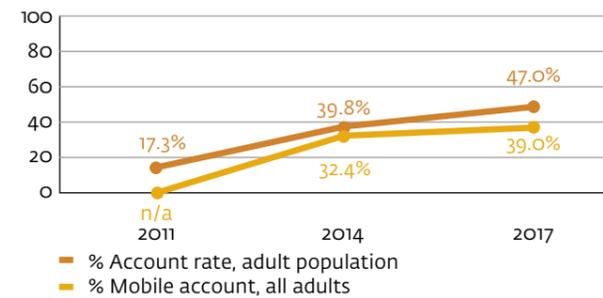
The number of mobile phone accounts fell in 2016, when the communications regulator required the MNOs to deactivate all improperly registered SIM cards. This also resulted in a drop of 8 percent in mobile money account penetration, to 53 percent.

The agent aggregator market is strong in Tanzania, with several large, aggressively expanding agent networks servicing both banks and MNOs.<sup>3</sup> The aggregator model lowers the cost of opening agents, as multiple providers can be serviced at a single agent. Three major aggregators – Selcom, Maxcom, and Cellulant – also offer their own value-added OTC services. Customers can pay bills and send remittances via the agents, without needing to use a mobile phone. It may be that these services are growing with customers whose SIM cards were deactivated.

In 2014, Tanzania became the first country to introduce an industry-designed interoperability scheme between mobile money wallets for P2P domestic remittances.<sup>4</sup> Consumers can now transfer money between the leading mobile wallets (P2P) at no extra charge. Tigo reported seeing an average monthly growth (by value) of 17 percent of P2P transfers following interoperability and the values tripled between July 2015 and July 2016. Other providers have cited similar growth. Interoperability is currently based upon bilateral agreements between MNOs and financial institutions.

The Central Bank has tended to favor an industry-led approach to DFS interoperability, but new regulations state that DFS providers must change their technical and commercial arrangements to interconnect services via a national switch by early 2018.<sup>5</sup> Charges, scheme rules and interoperability guidelines are still under discussion with stakeholders.

Overall financial inclusion rate vs mobile money account rate



World Bank, Findex

Any account ownership, adult population, 2017	47%
Any account ownership, women, 2017	42%
Any account ownership, young adults (15-24 years), 2017	46%
Financial institutions account, adults, 2017	21%
Mobile money account, adults, 2017	39%
Saved at a financial institution, adults, 2017	6%
Saved semi-formally, in a savings club or with person outside the family, adults, 2017	18%
Borrowed formally, from an institution or credit card, adults, 2017	5%
Borrowed from friends and family, adults, 2017	27%
Poverty rate, 2011	49.1%

GSMA

Unique mobile network subscribers, 2017	23.7 m
Mobile penetration rate, 2017	42%

Bank of Tanzania

Volume of MM transactions, 2016	1,676,997,520
Value of MM transactions, 2016	26.4654 b US\$ <sup>6</sup>
Registered mobile money users (wallets), 2017	76.1 m
Number of agents, 2017	398,452
Licensed commercial banks, 2016	38
Bank branches, 2016	810
Total assets, 2016	12.4339 b US\$ <sup>7</sup>

Mix Market

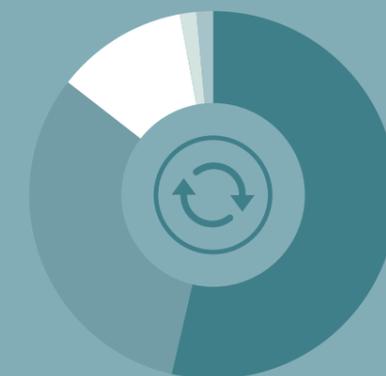
Licensed MFIs	13
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### Industry opinion:

*What is the most effective approach for achieving interoperability?*

Interoperability allows DFS providers to interact for the benefit of users and operators. In recent years, various development organizations, industry bodies, regulators and markets have embarked on projects to enable mobile money interoperability between DFS providers in different markets across the globe.



Joint effort by all of the above	(54%)
Regulator led	(32%)
Led by independent scheme such as a national switch/Visa/MC	(12%)
Donor/Stakeholder led	(1%)
Provider led	(1%)



## RESEARCH FOCUS

# Achieving interoperability in digital financial services

*In September 2014 the mobile financial services industry in Tanzania signed an agreement that allows customers belonging to one mobile money scheme to transfer money to a customer with an account at a different mobile money scheme. Tanzania thus became one of the first countries in the world with an industry-agreed interoperable market for digital financial services.*

Interoperability can mean different things. At the most basic level, interoperability is defined as ‘the possibility to transfer money between customer accounts at different mobile money schemes and between accounts at mobile money schemes and accounts at banks’. Interoperability should not be confused with interconnection, which is the ability to technically connect with another network. It is considered important because of its potential effects on consumers, businesses and the economy.

In mature DFS markets, and where scale has been achieved, interoperability can help businesses to manage costs, increase efficiencies through shared infrastructure and to increase transaction volumes. Users benefit from network effects and, ideally, from reduced transaction costs. Many governments believe that interoperability can help advance financial inclusion due to reduced transaction costs, and can also lower the cost of printing and managing cash. A 2008 study of interoperability in Latin America by the World Bank Payments Systems Group suggests that a more efficient payments system, through interoperability, in Brazil could result in a saving of 0.7 percent of GDP per year. Similarly, the practical experiences of interoperable payments schemes, such as VISA and MasterCard, illustrate that interoperability can contribute to an exponential increase in transactions. A Moody’s study on the effects of increased card usage (transaction volumes) suggests

that a 1 percent increase in card usage translated to an average GDP growth of 0.24 percent across a sample of 51 developed and emerging countries.

However, interoperability is not without risks, as it creates complexities at the technical, commercial and operational levels that need to be managed jointly by the participants. This is managed by ensuring that all participants adhere to the same standards to maintain the integrity of the system. Also, if imposed prematurely – in the early stages of business development or channel expansion – interoperability can dampen investment. It is more suitable for a market that has already reached scale. Effective interoperability requires industry to come together and agree to common technical and other relevant standards, or to incorporate international DFS interoperability technical standards and operating rules, so that the solution can be applied industry-wide, rather than through bilateral agreements between different operators. This implies a process of reaching agreement among industry players who have competing interests.

IFC functioned as the neutral broker for the industry negotiations that established the first use case for DFS interoperability in Tanzania in 2014. Few markets contain the perfect conditions for pursuing DFS interoperability, but there was strong consensus among stakeholders in Tanzania that a number of contextual advantages favored the process: DFS users were already inventing their own interoperable solutions such as managing multiple DFS accounts and making cross-carrier payment via vouchers; there were clear indications that the DFS market was nearing saturation from a customer acquisition perspective, although volumes and values remained high in absolute terms; the Tanzanian mobile payments market is more balanced in terms of market share between DFS providers than other East African markets, allowing for relative parity between negotiating parties; the regulator authority was supportive of DFS interoperability; and critically, the earliest demands for interoperability came from the DFS industry itself. Tanzania’s story of introducing interoperability standards offers a variety of lessons for other markets:

**Allow industry to define the rules.** Mandating interoperability through regulation may create market distortions that dampen investment and buy-in, especially when imposed at an early stage. Instead, interoperable business and technical standards, as well as commercial terms, should be allowed to evolve naturally in a mature, competitive market



Bank of Tanzania statistics on mobile payments

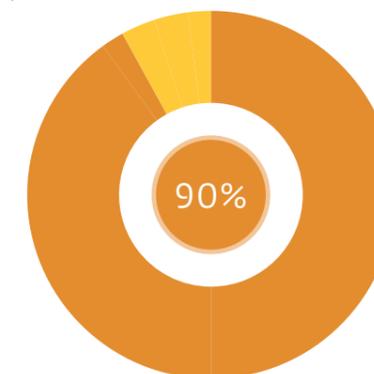


MOBILE PAYMENT SYSTEMS (MOBILE FINANCIAL SERVICES)

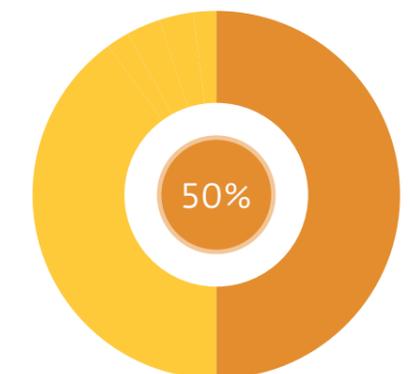
	2008	2009	2010	2011	2012	2013
Number of registered accounts	112,000	4,192,683	10,663,623	21,184,808	26,871,176	31,830,289
Volume	408,216	3,272,422	18,430,256	134,922,457	546,732,134	1,005,113,287
Value (TZS millions)	25,208.00	158,538.00	1,006,430.00	5,563,281.00	17,407,725.74	28,852,294.02
Number of agents	2,757	14,469	29,095	83,795	97,613	153,369
Average number of transactions per customer per year	3.64	0.78	1.73	6.37	20.35	31.58
Average transactions value (TZS)	61,751.62	48,446.69	54,607.49	41,233.17	31,839.59	28,706
Average value per customer (TZS)	225,071.43	37,813.02	94,379.74	262,607.10	647,821.51	906,441.47

Market demand for interoperable P2P transactions

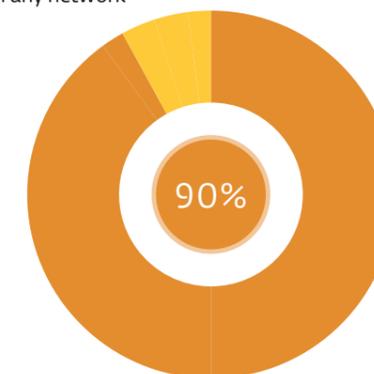
% said would use e-money to send money to any network



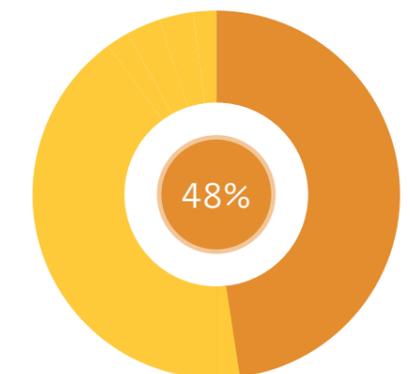
% willing to pay to send money to any network



% said would use e-money to receive money from any network



% willing to pay to receive money from any network





where both providers and consumers can derive additional value. As each market is different, interoperability should be resolved by the local industry participants who will ultimately profit and bear the weight of their decisions. Over the long term, one may find that many of the domestic solutions are very similar in nature and international interoperability could become a practical reality, particularly as operators tend to cover multiple markets.

**Success requires an industry champion.** Tigo was a staunch supporter of interoperability from the beginning. While the IFC process created the conditions for a collaborative approach, Tigo's vision and persistence helped drive the overall agenda and ensured focus on the end objectives. An active and influential industry voice offsets possible claims that the agenda was not in the interests of industry, and compelled competitors to at least monitor and engage in discussion.

**Identify an independent facilitator and/or neutral broker.** Ideally, this role should be undertaken by a party that has expertise in the given area, but that has no commercial, political or regulatory interests in the process. In this scenario, IFC played the role of facilitator by providing expertise and as neutral broker in engaging with various stakeholders at various levels. IFC's engagement assured participants that the process would not be hijacked by a competitor's commercial agenda or by a regulatory mandate. Also, the independent expertise provided helped on issues (related to interoperability) needing resolution, by providing practical advice based on best practice or on other industries' or countries' experiences.

**Ensure everyone is speaking the same language.** In most cases, DFS interoperability discussions will involve actors who operate in similar environments, use similar words, but have different meanings and approaches. Making sure from the outset that everyone is using the same

terminology and understands the models and motivations of others in the ecosystem will mitigate conflict and delays.

**Have a strong in-country manager.** A persistent and diplomatic resource who can gain the confidence of all parties is critical. Deep knowledge of local conditions and players is needed to organize what is inevitably a large group of disparate interests and personalities.

**Have a plan.** Interoperability will vary from market to market, but the elements that need to be resolved, such as who gets to participate or how disputes will be handled, remain largely the same. Starting with a clear outline of the issues to address and mapping an implementation plan to tackle these issues, will maintain the focus and overview needed to achieve the levels of detail necessary in an interparty payments agreement.

**Don't expect to accomplish all at once.** Industry participants will all be at different stages of readiness for interoperability. Focusing first on the ground rules affords all an opportunity to contribute to the vision, leaving the timing of adoption to each participant's discretion. Start with achievable areas of common ground and prepare to compromise. History shows that interoperability in other sectors, such as in the cards industry, was not resolved overnight. Progress will be iterative as participants will be learning what works best for them along the way, as they make operational and system adjustments to manage risks. A case in point is the Tanzania DFS industry's initial determination to pursue bilateral clearing and settlement procedures that could evolve into some form of multilateral clearinghouse model over time, as transaction volumes grow. A clear process and a common vision at the start can establish a path to follow in achieving a more ambitious goal in the long run.

**Further reading:** *Achieving Interoperability in Mobile Financial Services*, by IFC.

*"Even if my friend had a bank account, I would still send money from Zoono. It's simple, there are no queues here, and in 30 seconds you've done your transaction," says Phillip Chellah, a banker and Zoono customer.*



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*This Internet café in Kinshasa, the Democratic Republic of Congo, doubles as a FINCA agent.*



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## Thank you

### By Anna Koblanck

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This publication is the result of a broad team effort, and representative of the collaborative spirit and approach of the Partnership for Financial Inclusion team and IFC's Financial Institutions Group Advisory in Sub-Saharan Africa. On behalf of the whole team, and as editor of the report, I would like to thank everyone who has kindly contributed to its making.

We would especially like to thank our clients and partners across the continent for taking time out of their busy schedules to help us put together the case studies and for generously sharing their experiences with the broader industry. We would also like to take this opportunity to acknowledge the contributions made by many of our clients to our research over the past few years. Thank you.

Similarly, we would like to thank the consultants and experts working with us across the continent to advance digital financial services, expand financial inclusion, and build industry knowledge. We are also very grateful for the collaboration and support we enjoy from our colleagues at the World Bank, especially Robert Cull, Leora Klapper and the team behind the Findex data report.

We would also like to thank freelance journalist Thalia Holmes and photographer Nyani Quarmyne for traveling to Côte d'Ivoire, Madagascar and Zambia to bring us such vivid stories and images of digital financial services in practice. Also, many thanks to graphic designer Pierre Jansen van Rensburg, as well as Steven Palmer and the full team at Titanium Room for the excellent production of the report.

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## ACKNOWLEDGMENTS

### Photo credits

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### Field Notes

Field Note #1 Greenfield Microfinance in Sub-Saharan Africa: A Business Model to Advance Financial Inclusion	Julie Earne, Tor Jansson, Antonique Konind and Mark Flaming	February 2014
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A Sense of Inclusion: An Ethnographic Study of the Perceptions and Attitudes to Digital Financial Services in Sub-Saharan Africa	Anna Koblanck, Soren Heitmann and Gisela Davico	November 2017



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- Centre for Financial Inclusion blog <https://cfi-blog.org/2015/08/13/the-hold-up-with-mobile-money-in-nigeria/>
- <http://www.diamondbank.com/personal/financial-inclusion/diamond-yello-account/>
- Digital Payment Will Save Nigeria N3.2trn – IMF: <https://leadership.ng/2017/12/18/digital-payment-will-save-nigeria-n3-2trn-imf/>
- 757 billion NGN = 2.1003 billion USD (1 NGN = 0.0029 USD, March 7, 2018)

### 9 DATA ANALYTICS

- CIA factbook Cameroon <https://www.cia.gov/library/publications/the-world-factbook/geos/cm.html>
- IFC: A Sense of Inclusion – ethnographic study <http://www.ifc.org/wps/wcm/connect/15e6158a-8e52-444b-9103-391547cb1730/IFC+A+sense+of+Inclusion+DFS+Ethnographic+Study+2017.pdf?MOD=AJPERES>
- Business in Cameroon <http://www.businessincameroon.com/bank/3105-7160-ecobank-bets-on-digital-to-boost-financial-inclusion-in-cameroon>
- APA News <http://mobile.apanews.net/en/news/cameroon-societe-general-introduces-digital-banking>
- World Remit <https://www.worldremit.com/en/news/cameroon-diaspora-switches-to-worldremit-to-send-money-home>
- IFC: Turning MFI Digital Strategies into Reality [http://www.ifc.org/wps/wcm/connect/67a1ee9e-9f95-4baa-8430-2a101ca77a9e/MFI+Digital+Strategy+Field+Note\\_8.pdf?MOD=AJPERES](http://www.ifc.org/wps/wcm/connect/67a1ee9e-9f95-4baa-8430-2a101ca77a9e/MFI+Digital+Strategy+Field+Note_8.pdf?MOD=AJPERES)
- Business in Cameroon <http://www.businessincameroon.com/telecom/0407-7240-mobile-money-beac-bans-transactions-by-telecoms-operator-mtn-cameroon-outside-cemac-zone>
- 2,224,721,414,879 F CFA = 4,210,120,371.2439 USD (1 F CFA = 0.0019 USD, March 7, 2018)

### 10 AGRICULTURAL VALUE CHAINS

- World Bank: Shifting fortunes and enduring poverty in Madagascar <http://documents.worldbank.org/curated/en/413071489776943644/Shifting-fortunes-and-enduring-poverty-in-Madagascar-recent-findings>
- MF4A Madagascar financial sector profile <https://www.mfw4a.org/madagascar/financial-sector-profile.html>
- IFC field note 7: Turning MFI digital strategies into reality [http://www.ifc.org/wps/wcm/connect/67a1ee9e-9f95-4baa-8430-2a101ca77a9e/MFI+Digital+Strategy+Field+Note\\_8.pdf?MOD=AJPERES](http://www.ifc.org/wps/wcm/connect/67a1ee9e-9f95-4baa-8430-2a101ca77a9e/MFI+Digital+Strategy+Field+Note_8.pdf?MOD=AJPERES)
- GSMA 2015: Connected Women case study <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/08/HNI-case-study-final.pdf>
- CGAP blog <http://www.cgap.org/blog/small-farmers-mobile-banking-financial-inclusion-madagascar>
- 2,192,221,000,000 MGA = 707,738,826.8821 USD (1 MGA = 0.0003 USD, March 7, 2018)

### 11 INTEROPERABILITY

- Finscope Tanzania 2013
- Intermedia Tanzania wave 3 FII tracker survey p. 35
- AFA Fertile ground series: A 2016 Tanzania Ecosystem Review and Strategic Perspective on Digital Financial Services for Smallholder Farmers
- GSMA: The impact of mobile money interoperability in Tanzania <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/08/HNI-case-study-final.pdf>
- <https://www.mobileworldlive.com/money/news-money/tanzania-eyes-wider-mobile-money-interoperability/>
- 59,425.39 billion TZS = 26.4654 b USD (1 TZS = 0.0004 USD)
- 27,917.31 billion TZS = 12.4339 b USD (1 TZS = 0.0004 USD)



*The owner of a building supplies store, and a prospective MoMo Pay customer, in Abidjan, Côte d'Ivoire, on 7 December 2017.*



#### **CONTACT DETAILS**

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