Electronic Payments with Limited Infrastructure

Uganda's Search for a Viable E-payments Solution for the Social Assistance Grants for Empowerment

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Acknowledgments

The Consultative Group to Assist the Poor works toward a world in which everyone has access to the financial services they need to improve their lives.

CGAP develops innovative solutions for financial inclusion through practical research and active engagement with financial service providers, policy makers, and funders. Established in 1995 and housed at the World Bank, CGAP combines a pragmatic approach to market development with an evidence-based advocacy platform to advance poor people's access to finance.

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Executive Summary[1]

1. The Social Assistance Grants for Empowerment (SAGE) program is the Government of Uganda's first major cash transfer initiative, targeting senior citizens and vulnerable families. The Expanding Social Protection (ESP) agency under the Ministry of Gender, Labor and Social Development (MGLSD), with funding from the United Kingdom's Department for International Development (DFID), Irish AID, and the United Nations Children's Fund, designed the unconditional payment scheme with several core objectives in mind: reliability, cost-effectiveness, transparency, scalability, and financial inclusion. Currently being piloted in 14 districts (from 2011 to 2015), the government-led program is supported by DFID via Maxwell Stamp, a UK-based consulting firm, and pays recipients through mobile network operator MTN.

2. Social protection—including "social transfers"—is a topic that has gained traction in Uganda since the government included "extending social protection to vulnerable groups" in its 2010–2015 National Development Plan. Three unique factors influenced SAGE's program design:

    a. **Policy Pilot**. The SAGE pilot is a proof-of-concept experiment to make the case for a universal social security system in the country. Thus, many decisions about design and implementation are influenced by the need for political viability.

    b. **Available Options**. SAGE had very few electronic payment (e-payment) options when it began. Receiving five bids during tender, the program design team originally entertained a payment scheme that employed a bank-linked point of sale (POS), yet the financial sector infrastructure in the country could not support the proposal without substantial cost.

    c. **Target Populations.** SAGE targets chronically poor and vulnerable households through two different grants, the Senior Citizens Grant (SCG) and the Vulnerable Families Grant. However, after several challenges with effective targeting, the program has started to place more emphasis on the SCG, and field staff reportedly have adjusted payment scheme operations to meet the capacities of an elderly, largely rural target population.

3. Though working with MTN's Mobile Money Unit, the program does not use MTN's commercial mobile money product. Given MTN's limited network coverage in SAGE target areas, it provides electronic and manual payments, depending on network availability. The e-payment is through a SIM-embedded card that recipients present to MTN agents to insert in portable pay phones. MTN agents travel to subcounties to effect manual payments in areas with no mobile network.

4. To receive cash, recipients must present their national or resident's ID with the SIM card to their designated MTN agent. The transaction also requires a personal identification number (PIN), which program staff admitted is challenging for the recipients, particularly the senior citizens, to remember. As such, the PIN associated with each SIM tends to remain the default PIN of "0000" or "1234," which the agents enter for the recipients. (In some cases, the recipients do not even know their PINs.) Some program staff doubt recipients' capacity to understand and/or use the e-payment method and the program has invested in only one training, at the time of recipient enrollment.

5. Field staff, implementing partners, and recipients cited MTN's weak and, in some cases, nonexistent mobile network in SAGE districts as the number one challenge to mobile money based e-payments. Also, program and MTN staff acknowledged that MTN still lacks a robust mobile money agent presence in the pilot districts. MTN's insufficient mobile money infrastructure required SAGE and MTN to develop alternative solutions to e-payments using

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[1] This case study is based on interviews conducted in Uganda in July 2013. This case represents the situation with SAGE as at that time, unless otherwise indicated.

the mobile money platform. Yet while the SIM-embedded card model is a "workable" solution, delayed and faulty cards led to, at one point, manual payments for more than half the recipients. While some field staff acknowledge MTN's efforts to improve the network, which includes building five new cell towers to better serve SAGE recipients, some field staff question MTN's ability to meet the current demand and eventually scale up.

6. Fraud at the national government level and within MTN—though not connected to SAGE payments—has also led to setbacks for the program. As a result, the management structure of the program has changed. After a corruption and fraud scandal resulted in DFID halting all aid payments to the Government of Uganda at the end of 2012, the program had to adjust from a decentralized model in which district-level government received resources directly to manage its own operating budget, to managing all of the resources from its central secretariat office. A different scandal within MTN led to a complete change in the company's leadership and management. While SAGE staff suggest that the changes within MTN have ultimately been a blessing for the program, they admit that the challenges, which the scandal compounded, "nearly crippled the program" at one point.

7. Recipients largely receive their payments on time in an electronic, limited-purpose SIM-linked account.[2] However, financial inclusion and mobile money usage are still only distant thoughts given several challenges: lack of mobile money network coverage and agent depth, the agents' control over the payment process (entering the PIN, operating the phone), the limited time window within which to withdraw payments, and the lack of sufficient recipient training.

8. Despite the challenges, both e-payment and manual payment recipients have enjoyed the speed and efficiency with which they receive their payments. Manual payment recipients automatically receive the full value of their payment each pay period, while most e-payment recipients also elect to withdraw their full amount on the pay-out date.

9. The field staff insist that manual payments are faster than e-payments, as the manual payment process does not require the SIM and PIN process. One of the biggest challenges as the program moves forward is building the support of the local staff and implementing government partners to embrace e-payments longer term. The local staff's observed ease of the manual payments for recipients, implementing partners, and local staff outweigh the benefits of the card, such as traceable money flows, less risk to recipients, less liability for government, and an imperfect store-of-value option. However, local staff also are not in the position to consider the value for money proposition that the head office is forced to consider: MTN's delivery fees were notably lower than what any other bidder had proposed, and what any cash-in-transit company would propose for a fully manual payment system. Furthermore, secretariat staff argue that e-payments are necessary to prove that Uganda can create a transparent, efficient social protection system in an environment prone to corruption and leakage.

10. To make the SAGE program what its designers within DFID and the Government of Uganda envision—a limited-purpose instrument, a mobile money wallet where recipients could initiate transactions anywhere in the country with any agent—will require major investments in

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[2] As introduced in Bold, Porteous, and Rotman (2012), account-based payment methods can be distinguished as limited-purpose instruments or mainstream financial accounts. Whereas limited purpose instruments transfer the grant to the recipient through a notional account, these accounts are restricted in at least one of the following ways: (*i*) funds cannot be stored indefinitely; (*ii*) funds must be withdrawn only at dedicated infrastructure; and (*iii*) additional funds may not be deposited into this account from other sources. In contrast, mainstream financial accounts have none of the limitations of the limited purpose account and are typically available to nontransfer recipients as well. For more information, see Bold, Porteous, and Rotman (2012).

systems development at MTN while the program is simultaneously building operations and processes toward a national social protection system roll-out.

11. Looking beyond the pilot scheduled to end in 2015, ESP is preparing itself to scale up SAGE and roll out the nationwide program. Despite the pilot challenges, the program's stakeholders—policy makers, program and field staff, local governments, MTN, and recipients—are largely enthusiastic about the potential for SAGE at scale and are committed to its success. DFID has committed to continue supporting the program and the Ministry of Finance just made its first major fiscal contribution, demonstrating political will and a nod toward the program's future.

1. Uganda Context

Ranked 161 out of 186 countries on the Human Development Index in 2012,[3] Uganda had a gross domestic product per capita of US$547 in 2012, up from $454 in 2008. The World Bank reported Uganda's adult literacy rate to be 73 percent in 2010. Forty-nine percent of Uganda's population was under the age of 15 in 2012, with 49 percent between the ages of 15 and 64.[4]

Social Protection in Uganda

Beginning in 2000, the Government of Uganda (GoU) created a social development sector as a part of wider reforms and ministry creation in the country. At the same time, the World Bank and the United Kingdom's Department for International Development (DFID) organized training sessions on social protection in Africa, which GoU representatives attended. In 2002 the government developed a social development sector investment plan and, to continue promoting social development, the government formed an intergovernmental technical committee to steer the planning and initiate the national Poverty Eradication Plan. This included sensitizing policy makers through study tours to show them how social protection works in other countries. Uganda, along with 12 other African countries, signed the Livingstone Accord committing them to introduce social protection measures in their respective countries.

Introducing social protection policy in Uganda, the GoU, under the Ministry of Gender, Labor and Social Development (MGLSD), defines the policy objective as ensuring an "adequate, acceptable standard of living for a country's vulnerable and excluded citizens." In its 2010–2015 National Development Plan, the government has included "extending social protection to vulnerable groups" and "developing a clear policy framework for enhanced coordination of interventions" (Tumwesigye 2010). The government has established the Expanding Social Protection (ESP) Secretariat under MGLSD to introduce a national social protection system, which includes developing a national social protection framework.

DFID and Irish AID established themselves as core partners of the GoU to help promote social protection. The GoU's work has included promoting the policy within the government, where it is gradually gaining traction.

The Role of Direct Income Support

The 2005 Uganda Chronic Poverty Report argued that households in chronic poverty show a range of deficits that include deficient consumption and malnutrition, limited access to health and education, and limited voice and influence. For many of these households social exclusion reinforces their disadvantage. The report asserts that direct income support reduces the impact of key deficits affecting chronically poor households, through supplementing household purchasing power, which enables an immediate improvement in nutrition and consumption and long term investment in schooling and health.

Seeing "social transfers" as a key component of social protection the GoU has piloted the Social Assistance Grants for Empowerment (SAGE) program, providing cash transfers to senior citizens and vulnerable families.

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[3] Human Development Index (HDI) – 2012 rankings. http://hdr.undp.org/en/statistics/
[4] World Bank. 2012. http://data.worldbank.org/indicator. Full reference in Bibliography.

Financial Inclusion in Uganda

In 2011, Uganda had 2.4 bank branches for every 100,000 adults, compared to 5.2, 5.5, and 1.9 in neighboring Kenya, Rwanda, and Tanzania, respectively. Ten percent of Ugandan adults had a debit card and just over 20 percent had an account at a formal financial institution.[5] MIX Market reports the majority of bank branches are located in Kampala. The central region, where Kampala is located, is also home to the most savings and credit cooperatives (SACCOs), commercial banks, and microfinance institutions. Within the region, Kampala hosts "nearly half of the total access points," as Figure 1 shows (Linthorst 2013). FinScope Uganda found that 32 percent of urban dwellers have access to formal financial services, whereas 14 percent of rural dwellers have access.[6]

Figure 1: Distribution of Financial Service Providers across Regions
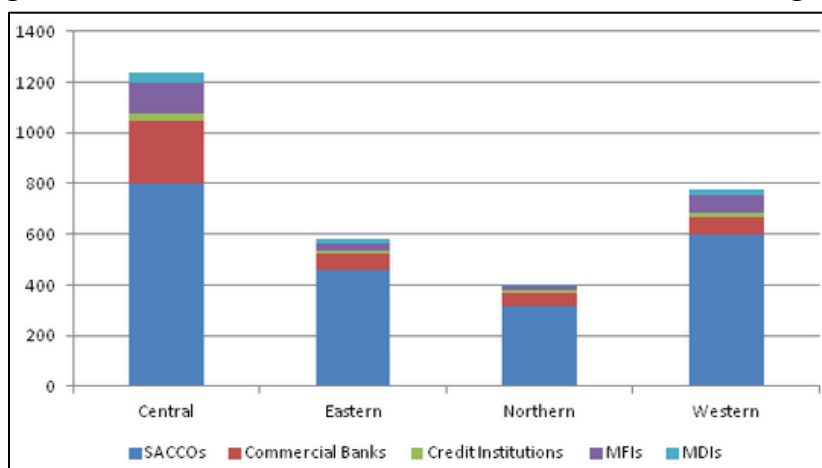
Source: MIX Market 2013.

However, like its neighbors, Uganda has seen an increase in mobile cellular subscriptions in recent years. In 2011, Uganda had 16.7 million mobile cellular subscriptions, up from 8.6 million in 2008 (and even 12.8 million in 2010).[7] GSMA reported mobile penetration to be 42 percent in 2012.[8] Since MTN introduced mobile money in Uganda in 2009, followed by Airtel (previously Zain) and Uganda Telecom in 2009 and 2010, respectively, Uganda has received international attention for its growing mobile money network (Ndiwalana, Morawczynski, and Popov 2012). In 2011, just over 3 percent of adults used their mobile phone to pay bills; 25 percent of adults received money on their mobile phone; and 20 percent sent money on their mobile phone.[9]

The Bank of Uganda (BoU) has expressed dissatisfaction with the amount of access to affordable financial services in the country, for example, at the opening of the Banking Finance and Insurance Expo in Kampala in March 2013. The BoU's executive director of Bank Supervision stated that BoU

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[5] World Bank. 2011. http://data.worldbank.org/indicator. World Bank Findex. 2011.
http://datatopics.worldbank.org/financialinclusion/. Full reference in Bibliography.
[6] The Steadman Group. 2007. "Results of a National Survey on Access to Financial Services in Uganda." Kampala, Uganda:
DFID's Financial Sector Deepening Uganda Project. http://www.fsdu.or.ug/pdfs/Finscope_Report.pdf.
[7] World Bank. 2011. http://data.worldbank.org/indicator. Full reference in Bibliography.
[8] Sub-Saharan Africa Mobile Observatory 2012, November 2012. http://www.gsma.com/publicpolicy/wp-
content/uploads/2012/03/SSA_FullReport_v6.1_clean.pdf
[9] World Bank Findex. 2011. http://datatopics.worldbank.org/financialinclusion/. Full reference in Bibliography.

expects financial institutions to "introduce products and services that directly address the needs of the people" (Businge 2013).

DFID has been a core funder of financial inclusion in Uganda. First funding Financial Sector Deepening Uganda 2001–2007,[10] it renewed its commitment with over GBP 4 million committed between 2011 and 2017 to "improve access to financial services in Uganda." DFID acknowledges that lack of access to financial services constrains economic growth in Uganda. The International Finance Corporation and European Investment Bank have provided funding to commercial banks to lend to small businesses, but such businesses have been unable to qualify for the loans. The African Development Bank has similarly lent funds to the Housing Finance Bank to build low-cost housing, which DFID expects will benefit middle-income households more than low-income households, as low-income households tend not to hold land titles for their homes (DFID Uganda 2012).

2. Overview of SAGE Program

Genesis

To "embed" a national social protection program as part of Uganda's national planning and budgeting process, MGSLD, in partnership with DFID, Ireland's development agency Irish Aid, and the United Nations Children's Fund (UNICEF), launched the ESP program. DFID employs U.K.-based Maxwell Stamp Plc. to provide technical and management assistance—including managing funds on behalf of the program stakeholders and contracting the payment service provider (PSP), MTN—to the MGLSD's Social Protection Secretariat for the SAGE policy pilot, which provides social transfers to senior citizens and vulnerable families, and develops national social protection policy.

The ultimate objective of SAGE is to "generate evidence for national policy making" to scale the program to the national level with development partner and government support, eventually creating a fully sustainable system provided by government. The process to implement SAGE has thus been intentionally slow to scale up to its full pilot plan to cover 14 districts.[11] The program began with a prepilot phase in 2010, testing MTN's mobile money product for payments in three districts, Kaberamaido (eastern region), Kyenjojo (western region), and Kiboga (central region).

Gradually rolling out to 14 districts in the pilot phase between April 2011 and February 2015, the program expects to reach around 600,000 people across about 100,000 households in all subcounties of the 14 districts.

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[10] DFID designed Financial Sector Deepening Uganda (FSDU) to "increase the availability of diverse, adapted financial services at affordable prices offered by transparent sustainable institutions to informed consumers." FSDU began in August 2001, with five years of funding worth GBP 7.1 million. It was then extended for a year and closed in September 2007. For more information, see http://www.fsdu.or.ug/.

[11] The districts are Apac, Kaberamaido, Katakwi, Kiboga, Kyenjojo, Moroto, Nakapiripirit, Nebbi, plus the newly created districts of Zombo, Kole, Napak, Amudat, Kyegegwa, and Kyankwanzi (Operations Manual). Since the government introduced its decentralization program in 1993, it has increased the number of districts from 38 in 1993 to 132 as of July 2012 (Singiza and Visser 2009).

Box 1. Unique Influencers of SAGE's Payment Scheme Design

Policy Pilot. The SAGE pilot was designed and implemented with big ambitions: the pilot is a proof-of-concept experiment to make the case for a universal social security system in the country. Politics and political economy have influenced the design and decision-making at strategic and operational levels. The program has to balance building a system that works for the pilot with building the institutions and buy-in to roll out a universal system.

Available Options. SAGE had very few e-payment options when it began. Receiving five bids during tender, only three were considered potentially viable. Originally, the program design team entertained a payment scheme that employed a bank-linked point-of-sale (POS) solution using biometric identification for enrollment. Yet the financial sector infrastructure in the country could not support the proposal without substantial cost: Uganda has a limited availability of POS terminals (three for every 100,000 adults in 2011) and poor mobile and Internet network coverage. Moreover, the biometric solution proposed by the financial institution proved to be prohibitively expensive. The program turned to MTN to devise a new payment solution through mobile money and even then faced challenges designing the system around the existing mobile network and mobile money infrastructure.

Target Populations. SAGE targets chronically poor and vulnerable households through two different grants, the Senior Citizens Grant (SCG) and the Vulnerable Families Grant (VFG). However after several challenges with effective targeting, the program has started to emphasize SCG, and field staff reportedly have informally adjusted payment scheme operations to meet the capacities of the elderly and largely rural population.

Program Elements

Table 1. SAGE Program Details

Objective/Purpose of the Scheme	Generate evidence on the feasibility and impact of large-scale social transfers in support of national policy and political decision-making processes.
Target Population(s)	Older people and their families (SCG) and households with high dependency ratios (VFG).
Requirements to Register for the Grant	SCG—Ugandan citizens 65 years and older (regardless of income level) who have been resident of a program area for at least 1 year at the time of targeting. In Karamoja District, Ugandan citizens 60 and older qualify.

VFG—Ugandan citizens with a vulnerability score above the eligibility threshold. |
Conditionality	None
Average Amount per Grant Paid	At time of research: UGX 24,000 (US$9.28) if monthly, or UGX 48,000 (US$18.57) if bimonthly As at December 2013: All bimonthly at UGX 50,000 (US$19.80)
Payment Frequency	Monthly and bimonthly, moving to bimonthly only
Payment Period and Duration	Up to 3 pay points per subcounty. All payments in a subcounty are completed within the first 5 working days of the month. Individual pay points are usually open for 1–3 days.

Duration of Scheme	Pilot phase began in 2011 and is schedule to end in 2015, although program is expected to become permanent and scale up nationally, subject to financing.
Start Month and Year	Pilot began in April 2011 and is planned to continue through February 2015.
Status as of July 2013	Pilot. Cabinet decision on national scale up expected in 2013: Ministry of Finance made its first financial contribution in 2013, suggesting the SAGE program will continue past the pilot phase.
Number of Grants Paid Per Cycle	Pay half of the 95,000 recipients each month for bimonthly payments.
Total Number of Recipients	95,000

In addition to liaising directly with DFID, Maxwell Stamp, MTN and MGLSD, the ESP program engages a chain of implementing partners at the district, subcounty, parish, and village levels of government. The program expects partners at all levels to communicate with monthly parish, subcounty, and district-level program coordination meetings to discuss payments performance, grievance tracking and resolution, and logistics and future plans.[12] To encourage full understanding and commitment from all partners, ESP based the SAGE program "on simplicity," as demonstrated by the annual registration exercises, simple senior citizen targeting, limited pay points, short enrollment process, and unconditional payments.

Table 2. SAGE Stakeholder Profiles

Role	Details
Funders	DFID (primary), Irish Aid, UNICEF (original); GoU Ministry of Finance
Initial Champions	Ministry of Gender, Labor and Social Development, DFID
Core Agency	ESP Secretariat at the Ministry of Gender, Labor and Social Development
Program Administrator	ESP Secretariat with technical assistance from Maxwell Stamp Plc.
Other Implementation Supporters	District and lower local government authorities
Payment service provider	MTN Uganda Ltd
Agents	MTN Mobile Money Agents
Evaluation Provider	Oxford Policy Management Ltd
Technical Assistance in Design	Maxwell Stamp and Help Age International
Current Recipients	Elderly and other vulnerable Ugandan citizens

Current Payment Scheme

The ESP program designed the SAGE payment scheme with several core characteristics in mind: reliability, cost-effectiveness, accessibility, transparency, scalability and financial inclusion. The program thus turned to electronic payments (e-payments) to distribute SAGE payments, despite Uganda's underdeveloped financial services infrastructure outside of Kampala. The program leverages MTN, the mobile network operator (MNO) with the largest volume of mobile money transactions in Uganda, to pay recipients through MTN's Mobile Money Unit. Under its current pilot phase, Maxwell Stamp manages DFID funds for SAGE payments, transferring funds directly from Maxwell Stamp's own mobile money account into recipients' accounts. However, because of key infrastructure and operational limitations, the program does not pay recipients through MTN's

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[12] SAGE SCG Implementation Guidelines Sub-County and Parish, October 2012, pp. 54–55.

commercial mobile money product. Rather, MTN delivers cash payments via a SIM-embedded card-based payment model in which recipients insert their cards into portable pay phones (referred to herein as Equatel phones), as shown in Figure 2, entering a PIN and transacting with an agent who then gets clearance to immediately pay out the cash stipend. While recipients can choose to leave money on the SIM, fulfilling an objective of the original design to provide store of value to recipients, they cannot use it to transact anywhere but at pay points that have the Equatel phones. With very few exceptions, recipients use one specific pay point during a set pay period each month.

Figure 2. Portable Equatel Pay Phone

Inserting the SIM card

Portable Equatel pay phone

Note: Images from *SAGE Senior Citizen Grant Implementation Guidelines for Sub-County and Parish Staff, October 2012.*

Table 3. Side-by-Side Comparison of Manual and Electronic SAGE Payment Schemes

Payment Scheme Detail	Electronic	Manual
Current Payment Service Provider(s)	MTN Uganda Ltd	MTN Uganda Ltd
Name of Associated Payment Service/Product	MTN Mobile Money[a]	Cash
Year PSP Began Involvement	2011	Same
Fees Paid by Scheme to Provider	At time of research: 4.2% of transfer value for monthly payments of UGX 24,000 As at December 2013: 3.5% of transfer value for bimonthly payments of UGX 50,000.	Same
Pay Points	Up to 390 pay points managed by a small number of large Mobile Money "master-agents" who either deliver payments directly or subcontract to smaller agents.	Same
Payment Instrument	A SIM card but not in a mobile phone. SIM is used to access public call boxes.	SAGE registration card
Payment Device	Equatel public telephone	N/A
Authentication Process	SIM, national or resident's ID and PIN	ID and registration card

Reconciliation Process	Electronic where mobile network available. Manual where not.	Manual
Financial Inclusion/Store of Value	Store of value possible on SIM card.	No
a. The SAGE program refers to the payment service as "mobile money," though it is not MTN's commercial mobile money product.		

Registering for the Payment Scheme

The program employs a six-step registration process for its SCG recipients:[13]

1. Recipients complete the SCG registration form, provided by the village chairperson or parish chief (a civil servant) to all senior citizens (65 and older; 60 and older in Karamoja District) in a designated area.
2. Parish chiefs verify recipients' eligibility via a community orientation at the village council meeting. Parish chiefs verify the identification of recipients either by their formal ID or, in the absence of a formal ID, by sight.
3. Subcounty community development officers (CDOs) hold a parish eligibility verification meeting to verify the eligibility of each applicant and prepare a final recipient list, which is used to prepare for enrollment.
4. Subcounty chiefs (head of subcounty local government structures) issue a subcounty resident's ID card where necessary, as a photo ID is a requirement for enrollment.[14]
5. Participants enroll with MTN Mobile Money, at which point they receive their SIM cards and "choose" their PIN.
6. For each parish, MTN staff demonstrate how the payment process occurs.

The program design team structured registration in such a way that, since the SCG component is meant to become an old age pension scheme, qualified senior citizens will be able to register as soon as they are of age. When a recipient dies, his/her family receives four months of additional payments, known as a "transitional grant," before being removed from the program. Next of kin and parish chiefs are responsible for reporting deaths of recipients by submitting an SCG Recipient Death Notification Form.

Receiving the Payment

The program communicates the exact dates for payment distribution with local SAGE and government offices, which notify recipients.[15] Each district has its own communications plan, which may include radio announcements about upcoming payment days (such as in Apac District) or announcements over megaphones in markets (such as in Kiboga District) in addition to door-to-door announcements about the payment date. On pay days—typically one to three days within the first five days of the month—recipients gather at a designated pay point to collect their monthly or bimonthly (depending on whether payment is electronic or manual) stipend from an MTN agent,

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[13] Because the vast majority of SAGE recipients are recipients of SCG, and the program intends to eliminate VFG, we have focused on description of the SCG registration and payment processes. For more information on registration and payment for VFGs, see the 2012 SAGE Operations Manual.

[14] The recipient may designate an "authorized alternative recipient" who has a formal ID to withdraw the payments for the qualified recipient.

[15] Though the payments are made on a monthly or bimonthly basis, depending on whether the payment is electronic or manual, unpredictable obstacles in reporting, reconciling data, and processing payment information between Maxwell Stamp and MTN make it unlikely that payments will be distributed on the exact same date each payment period. The program typically is able to deliver payments within the first five days of the month, but it is not yet able to guarantee payment on "every first Monday of the month," for example.

which is cross-checked and verified by local government staff. The program schedules manual payments to be bimonthly and e-payments to be monthly so that staff can manage the issues between payments: e-payments take about 1.5 weeks per month to process and distribute, and manual payments can take up to 2.5 weeks. The MTN agents are responsible for having sufficient liquidity. To get cash, the agents transfer their electronic float to local bank branches in exchange for cash. In some cases, where bank branches specify a maximum amount of float they will accept, agents must travel to multiple banks to obtain sufficient cash. They are then responsible for transporting the cash to the payout locations. MTN and its subcontractors incur the risk of an agent losing money in transit; even if the money is lost, all recipients will receive their payments.

As at December 2013, the manual and electronic payment processes occur every two months, and recipients receive UGX 50,000 (US$19.80). The manual payment process is as follows:

1. The MTN agent verifies the recipient's identification, using the recipient's national ID and his/her program registration card (a plastic photo ID provided by SAGE for manual payment recipients) and compares the recipient's name to the list of recipients in a SAGE-provided ledger.
2. Local government staff act as witness to disbursement throughout the payment process.
3. The recipient receives the cash and acknowledges receipt of the payment by signing his/her name or providing his/her fingerprint as signature, all of which is noted in a ledger that the agent and local government official sign.

The e-payment process is as follows:

1. Recipients present their SIM cards and ID cards to the MTN agent.
2. The agent inserts the SIM card into the Equatel pay phones slot and enters the recipient's PIN.
3. Once the MTN agent receives confirmation that the mobile money transaction is completed, s/he pays the stipend, handing the money to the local government official to also count the amount. The recipient can elect to withdraw all or a portion of the UGX 50,000.
4. The government official hands the money to the recipient, who signs for the payment. The official signs off on the recipient receiving his/her money, and another government official verifies the transaction.

If recipients have a complaint about MTN, they can call a toll-free number or report the problem to an MTN agent or sales team member. If they have a question about a payment or another question, problem, or complaint, they inform their parish- and subcounty-level SAGE representatives using the SAGE Paypoint Report Form to track the resolution of the grievance.

3. Evolution of SAGE Payment Scheme: Design and Implementation Processes[16]

Designing SAGE

Politics and political economy have influenced the design and decision-making at strategic and operational levels. For example, according to one interviewee, the design team lobbied hard for the

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[16] This list is not indicative of all steps taken in designing the SAGE payment system, but an illustration of particularly critical steps. For more details on all of the steps taken in the design and implementation process, see Annex A.

SCG component of SAGE because "universal pension schemes have proven more politically palatable globally than program's targeted at the poor and vulnerable." As such, the program has had to balance building a system that works for the pilot with building the institutions and buy-in to roll out a nationwide social protection system; failures within the pilot program could threaten the future of a social protection scheme in Uganda. Thus, having already made several changes to the original design, SAGE's ability to continue to iterate and adjust given the limitations of the system already in place is impressive and can be attributed in part to champions within the ESP program who have driven the scheme.

Figure 3. SAGE Design to Implementation Process

2000s
GoU created a social development sector and plan and began promoting social development through formation of an intergovernmental technical committee and study tours to other countries implementing social protection strategies.

2011
The program began with a six-month prepilot phase in 2010, testing MTN's mobile money product for payments in three districts.

September 2012
SAGE made first manual payments.

November 2010
SAGE launched procurement process.

January–June 2013
MTN management restructured

June 2010
Maxwell Stamp SAGE program manager arrived to oversee program set up and implementation.

August 2011
After a lengthy bid process during which five PSPs submitted bids, SAGE selected MTN as its PSP.

September 2011
SAGE made first MTN payments.

October 2012
Faulty cards caused major backlog of payments.

June 2013
Agent involved in SAGE payments was held up, resulting in 2-month suspension of all manual payments.

April 2011–February 2015
GoU gradually rolls out to 14 districts in the pilot phase, expecting to reach 95,000 households.

Critical Design Steps Taken

1. Idea Generation. The newly formed social protection sector, under MGLSD aspired toward a nationwide social protection system for Uganda, turning to international donors for technical and financial support.

2. Gain Donor Support. DFID, among other donors, agreed to invest and support the development of a policy pilot aimed at demonstrating the impact, scalability, and sustainability of a new social protection system.

3. Pilot Plan Developed, Including Specifications for the Desired Payment System. The program design team crafted a pilot plan to test implementation of electronic social transfers for 100,000 vulnerable households in 14 districts throughout the country over the course of five years. The team initially explored a payment scheme that used a financially inclusive bank-linked POS solution with biometric identification used for enrollment.

4. **SAGE Launched.** With the resources and basic design parameters set, MGLSD established the ESP program and launched the SAGE program. Once the program was up and running, the design team, led by Maxwell Stamp and employing other technical experts, developed the management information system (MIS) and refined the payment processes.

Critical Steps Not Taken

1. Accurate Feasibility Study on Financial Infrastructure. The program reportedly reviewed the available infrastructure in the country and determined it sufficient to support the original program design. However, the lack of sufficiently viable options for e-payments in the country—either through the original design of a card-based bank account-linked model or the subsequent off-the-shelf mobile money account offering—suggests the need for a complete supply-side feasibility assessment.

2. Market Research with Target Recipients. SAGE invested heavily in identifying and targeting the vulnerable households that are the intended recipients of the program. However, neither the program nor MTN conducted market research with the target population to lend insight into the demand and viability of any optional payment modalities.

Implementing SAGE

"The first 3,000 were the hardest."— SAGE Operations Manager

Process Highlights

Actual implementation of the proposed payment scheme has proven challenging. Yet while each new obstacle seems to compound the one before it, the program has adjusted to and worked around the unanticipated challenges that have arisen.

Highlights of the implementation plan include the following:
1. **Invite Bids for PSP Contract.** The Expression of Interest attracted nine submissions, of which six were invited to tender and of which five actually did (though two of those proposed to outsource to MTN). SAGE staff listed only three viable bidders for the PSP role: Equity Bank, MTN, and PostBank Uganda. SAGE describes an exhaustive process in which it ensured all bidders were aware of and understood well the requirements of the program.

2. **Interrogate Bids and Select PSP.** Equity Bank was initially the "preferred tenderer" for the SAGE pilot. Of the five PSPs that applied for the tender, Equity Bank submitted a proposal that reflected its experience as a PSP for HSNP in Kenya and as a seasoned applicant for partnerships and funding. However, when SAGE further interrogated the costs to implement the solution, particularly the biometric identification solution for enrollment, Equity increased its bid by 300 percent. When contract negotiations fell through with Equity, SAGE went back to the other two applicants, MTN and PostBank, to work with them to improve their proposals. The program offered MTN 12 districts and PostBank the opportunity to deliver in two districts. PostBank was unable to offer a plan on how it would sufficiently meet the requirements of serving recipients in two districts, resulting in the program pursuing a partnership with MTN alone.

3. **Provide Extensive Support and Guidance to the PSP during System Design, Piloting, and Roll out.** While MTN Uganda had no experience of making social cash transfers and still had network challenges, the MTN team demonstrated a commitment to figuring out payment solutions: the CEO and executive leadership expressed their long-term commitment throughout the bid and

contracting processes. SAGE provided support to MTN in business model development and operation systems design, well as resources for dedicated project management and financial management staff.

4. **Develop Clear Performance Criteria for PSP.** SAGE program staff developed clear contract terms and conditions for the performance of the PSP, but were admittedly reluctant to enforce penalties or adhere too strictly to all terms. Realizing they would need a strong relationship with the PSP to successfully execute the program, they decided to be flexible with the PSP, working with it to devise, support, and execute solutions that would allow the PSP to meet its contract terms.

5. **Develop Clear Roles and Responsibilities among All Stakeholders.** Several actors are responsible for the implementation of the SAGE pilot, including a chain of local and central government officials. The SAGE team saw that the partners' enthusiasm and commitment to the scheme was a critical driver of the program's success. The team thus focused on simplifying payment processes and procedures while being very detailed around roles and responsibilities. To initiate each partner into the program's processes, SAGE designed a six-step process to train each group of partners on social protection, the specifics of the SAGE program, and the roles of each partner, including the communication strategy for relaying messages up and down the implementation chain. Following these trainings, SAGE trained recipients and MTN staff.

6. **Prepilot.** The SAGE Secretariat conducted a six-month prepilot to test MTN's mobile money payment solution, as well as its targeting and registration process.

7. **Roll Out Pilot.** SAGE began its full-scale pilot roll out intending to reach approximately 100,000 vulnerable or chronically poor households in 14 districts across the country. With a future nationwide social protection system in mind, the program wanted to understand first and foremost, (*i*) How do you target? and (*ii*) How do you pay?

Challenges to Implementation

"You can't set up a [Government to Person e-payment] program in a country without a sufficiently robust financial sector or payments system without experiencing some challenges."— SAGE Program Manager

Challenge One: Payment Method. The SAGE prepilot revealed a crucial problem: the custom MTN mobile money-based payment solution would not suffice. Although MTN and SAGE custom built a payments solution using the mobile money platform and a SIM-embedded card that is inserted into an Equatel pay phone, the mobile money agent network was not robust enough in the pilot areas, and network outages meant limited reliance could be placed on the mobile communication channel alone.

Challenge Two: Readiness for Mobile Payments. The number one issue for all e-payment recipients, as well as local and head office SAGE staff and implementing partners, is the unreliable and, in some areas, nonexistent mobile network coverage. Recipients in Apac (Northern region) reported that if the network is offline they might wait for it to come back online, but if the network signal is weak they might return the next day if the network signal is stronger. For those paying to travel to the pay point, returning the next day costs an additional transportation fee. SAGE staff, expressing concern about the network and sending recipients home to return the next day, sometimes postpone payments to the next month if the network is down so recipients avoid

incurring additional transportation expenses. Agent network coverage also is not robust enough to use it for payouts.

Challenge Three: Donor Pressure to Deliver Quickly. Donor pressure to meet demanding targets for recipient enrollment within a relatively short space of time may have stifled the program's ability to be as creative as it would have like to find solutions to problems. For instance, the program argues that it could have been beneficial to pilot several different solutions using even small service providers but reported that "there was simply no time for experimenting with a number of service providers. We needed to choose a PSP who had the capacity to get things moving very quickly. Although we are a pilot, we are also expected to deliver two things: large numbers of recipients to meet the donors' expectations and prepare for national roll-out. SAGE is not a pure experiment—it is phase 1 of a national program."

Challenge Four: Bureaucracy. Some program staff and stakeholders interviewed suggested the bureaucratic cultures of the program, PSP, and donor may be stifling innovation and creating a prolonged payment process, which from start-to-finish can take 2.5 weeks. Some field-level program staff suggested that the levels of bureaucracy in the program operational structure seem to slow down data collection and reconciliation as well as the resolution of other problems, while others suggested that MTN's culture as a large utility company with a near monopoly has impacted its ability to be a sufficiently efficient and responsive partner.

Challenge Five: Fraud Impacting Program Operations. Fraud scandals at the national government level and within MTN, though completely unrelated to SAGE implementation, have rocked the program operationally. After a corruption and fraud scandal resulted in DFID halting all aid payments to the GoU at the end of 2012, the program had to adjust from a decentralized model in which district-level government received resources directly, to managing all of the resources for the pilot and payments from its central secretariat office, causing additional challenges in management capacity for the program. A different scandal within MTN Mobile Money in mid-2012 led to a complete change in the company's leadership and management. Interestingly, the program sees the MTN scandal as a blessing in disguise: "Everyone originally involved in SAGE at MTN, from the CEO to the day-to-day project manager has been fired or has left. It nearly killed the program…but now the CEO is engaged, the mobile money staff are responsive and are building their internal capacities to respond to the program's current and future needs."

Challenge Six: Fraud at the Recipient Level. Field staff have reported risks of fraud at the recipient level, in the forms of false registrations (reports of community implementing partners in nonprogram districts taking bribes to falsely "register" people) and agents and/or implementing partners skimming funds on pay-out days. SAGE mitigated the risk on pay-out days by conducting a large-scale communication campaign to educate recipients on their rights, requiring field staff to conduct spot checks at pay-out locations, by conducting internal audit exercises and analyzing disbursement data to identify high-risk transactions for investigation. However, it remains a fact that the system is vulnerable should agents and implementing staff collude.

Challenge Seven: Lack of Commitment to Teach or Learn PIN. Despite some training on PINs and the public phones used for SAGE payments, most recipients said that they either do not know their PIN or are aware that it is a generic PIN such as 0000 or 1234, but the agent enters the PIN for

them.[17] Rather than slowing down the process by requiring each recipient to remember and enter his or her PIN, agents know the recipients' general PINs and enter the PIN for the recipients, which may be seen as a "program modification" of sorts. However, recipients overall did not express concerns with not knowing their PIN, as long as they receive their full amount efficiently.

Challenge Eight: Faulty and Lost SIM Cards. MTN has struggled to deliver SIM cards of consistent quality. One batch of faulty SIM cards from an Asia-based manufacturer led to three months of delays in payment of monthly transfers to over 40,000 recipients. Field staff also reported that MTN has been slow to replace scratched or lost SIMs, leading to months of backlogged payments for recipients. Indeed MTN's standard procedures for replacing lost or faulty SIM cards are unsuitable in the SAGE operating context and the SAGE program staff have to play a direct role in managing these processes. This is one example of a wider issue relating to the on-going negotiation of the division of labor among MTN, its agents, and the SAGE program staff.

Summary of Modifications to the Payment System Design
"No one else [but MTN] could do this at scale."— SAGE Program Manager

SAGE's mobile money solution, developed after Equity's biometric-based bank account-linked proposal fell through, looks quite different than the off-the-shelf mobile money offering MTN originally believed it could deliver. Yet despite MTN's challenges with the payment scheme and modalities used, the program believes that MTN may be the only viable PSP option to meet the program's need for one partner to make payments nationally: the banks, SACCOs, other financial institutions, and other MNOs lack the national presence and rural reach that MTN has (even if its mobile network still does not sufficiently cover SAGE's target population). Recognizing their limitations and lack of other options, MTN and SAGE have worked together to create a payment scheme that can meet the demands of paying cash to recipients, at least in this pilot phase.

Modifications over time to the design and implementation of the program resulting from the prepilot and larger pilot processes include the following:

1. **Shifting Focus from Senior Citizens and Vulnerable Families to Only Senior Citizens.** The program originally targeted two populations, senior citizens and vulnerable families. Due to challenges in targeting vulnerable households, SAGE is increasingly emphasizing SCG. The program cited both operational and political expediency as ultimate determinants of the change. Generally, more citizens and government staff at the national and local levels seem to prefer SCG, in part because it is easy to define the criteria for inclusion, and politically "it is easier to sell taking care of the elderly than taking care of the poor."

2. **Agent Structure.** MTN shifted from a system of contracting with each individual agent to one in which MTN outsources to master-agents who employ micro-agents.

3. **Manual Payments.** MTN faced several challenges rolling out its SIM-based payment scheme, stemming largely from weak or nonexistent mobile network coverage in some areas, as well as an initial batch of faulty SIM cards that had to be replaced. After several months of delays and

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[17] In several cases we heard from recipients who also have mobile money accounts. Some remember their PINs and are able to transact themselves, while one woman in particular explained that she has her PIN written on a piece of paper and hands it to the agent to transact for her.

increasing pressure to roll out SAGE payments, in September 2012, the program began employing manual payments to efficiently serve all recipients. This included the SAGE team creating a manual payments system for MTN, helping MTN to create a documentation process for creating payrolls, reconciling, reporting and compensating agents, so that the agents and MTN could prove recipients had been paid. When recipients lose their SIM cards or receive faulty ones, the staff move the recipients to manual payments at least to receive the monthly payments going forward; however, the recipient can recover his/her backlog of payments only once he/she receives a new SIM. For nearly one year, the majority of SAGE payments were made manually. However, after a mass exercise to register and distribute new SIM cards occurred in July 2013, only 20 percent of recipients still receive manual payments.

4. **Centralized Recipient Enrollment in MTN.** The program has made an executive decision to alter the registration processes as it brings the 43,000 manually paid recipients into the electronic system. They used to use a decentralized approach in which the program would work with the local government and MTN to register recipients to the program and to open an MTN account. The lengthy process and need to shift recipients into the electronic system quickly led the program to centralize SIM registration and activation at headquarters in Kampala, then distribute the SIMs to recipients.

5. **Bimonthly Payments.** The program plans to move from monthly to bimonthly e-payments in an effort to better manage the multilevel payment process and reduce costs for the program overall. (The program already makes manual payments bimonthly.) Shifting to bimonthly payments It reduces *(i)* direct operating costs for MTN and the dealers, *(ii)* opportunity costs for MTN and dealers who are otherwise engaged in airtime sales and mainstream mobile money business activity, *(iii)* transport costs for recipients thereby increasing net value of the transfers, *(iv)* cost of delivery from 4.2 percent to 3.5 percent of the value of transfers, thereby increasing sustainability and value-for-money. It also *(v)* creates space for other activities such as targeting, training, complaints resolution, etc. With this shift to bimonthly operations, MTN and SAGE are also renegotiating the fees MTN receives for transfers.

4. Stakeholder Experiences and Perspectives

SAGE, Secretariat

"We are avoiding the bureaucracies along the [value chain]. Money goes direct from us to the recipients, so there is less leakage, less corruption, more transparency."— Head of Social Protection Secretariat, MGLSD

The SAGE Secretariat at the ESP program launched the pilot with lofty ambitions of being a financially inclusive e-payment system. When the realities of Uganda's communications and financial infrastructure set in, the program staff adjusted their objectives down to the basics: they wanted an electronic system that provides transparency and easy management of funds. And although they abandoned the goal of achieving formal financial inclusion of recipients, they maintained a store-of-value objective, which they achieved through a SIM-based payment card offered via MTN's mobile money service.

The SAGE Secretariat summarized its top three motivations for its choice of e-payment modality as follows:

- **Minimize leakage.** Having an electronic platform through which the program can track inflows and outflows minimizes, though does not eliminate entirely, the risk of leakage inherent in cash payments. Acknowledging the pervasive nature of corruption and collusion in Uganda's economy, the program sought to prove that an electronic-based social transfer system could be largely impervious to those otherwise persistent drains of resources.
- **Required by policy or mandate.** A transparent, financially inclusive payment system was an early objective of SAGE. Considering the long-term viability of the program and the long-term impacts envisioned from formal financial inclusion, the program never considered a manual payment system.
- **Transfer risk/management load (onto PSP).** Recognizing the liability of bulk cash transfers and the management burden of distributing them, the program wanted a system in which the burden and liability inherent in managing cash transfers did not fall on the program itself, but on the PSP. This would help free up staff capacity for managing other aspects of the social transfer program, while also offering a traceable system for monitoring the transfer flows that was more clearly an expertise of the firm designated to manage the program.

Yet the SAGE secretariat acknowledges the many challenges that have stemmed from administering e-payments in Uganda. Even though MTN was the most (and perhaps only) capable PSP for SAGE in its pilot stage, it has struggled to make the program work well. SAGE cited the top challenges to the payment scheme currently used for SAGE as the following:

- **Capacity/presence of the provider.** The program questioned the appropriateness and strength of MTN business processes and systems, including subcontracting arrangements, quality assurance systems, data management systems, IT and finance systems, and logistics.
- **Network and agent availability.** Noted both at the secretariat and field level, the program acknowledges that the mobile money network and agent network for MTN is not yet equipped for payments at the volume and in the areas that SAGE is currently operating. The distance to pay points is still a burden to many recipients.
- **Capacity of recipients to use the service.** The recipients, largely the elderly in remote areas, are comfortable divulging their PINs for their SIMs to the agents making pay-outs. Using the actual mobile money agent system for payments then becomes worrisome, as absent the controls set by having payment days in which local leaders verify payments, the recipients become vulnerable to fraud.
- **MTN corporate culture/approach to service quality.** Though MTN's approach to SAGE payments is evolving, the program has struggled to hold MTN to the standards set forth in the original contract, particularly in terms of regular and timely reporting and responding to problems. While some program staff view MTN's history as a telecommunication monopoly as a driver of what they view as, at times, an indifferent corporate culture, others blame MTN's performance challenges on a weak business case for involvement. As the SAGE Operations Manager noted, *"MTN hasn't quite worked out its business model for this program. How can it start seeing this as a business opportunity to expand its agent network?"*
- **Wholesale management changes.** MTN's management structure went through wholesale changes during the pilot period, delaying planned operations and upending established partner relationships.

The program is open about the costs and benefits of each of the two current payment systems. They agree that under the current model, manual payments are faster and easier than e-payments, and thus recipients and field staff prefer them to e-payment options. Indeed, an electronic

transaction can take 3 to 4 minutes and depends entirely on the strength of the network signal and the capacity of the community members to use the technology. With limited understanding of the technology and system, the recipients are more vulnerable to agent manipulation or fraud. However, the program views e-payments as safer for both the program and the recipient. For the program, the liability of mistaken or missing payments falls on the PSP, so if something happens and an agent loses money intended for payments, the program and the recipient still have money in the system. Further, the SIM card account allows for savings, to an extent: recipients can choose to leave balances in their account, but they are limited in the opportunities to make withdrawals to when the agent is available, and cannot make other payments from the account.

Overall, however, SAGE staff are happy with MTN's recent investments in SAGE, such as dedicating staff to manage SAGE operations and increasing network coverage in remote SAGE payout areas as part of its broader network expansion plan. They also believe the bulk payment system works well, providing transparent and immediate verification of payments each month, something they believe no financial institution in the country could currently sufficiently provide. While the program staff believe that many improvements currently or soon to be put in place will improve the PSP performance overall, they maintain that MTN still needs to improve its performance as the SAGE PSP. They suggested several modifications that they felt would ease MTN's overall project management burden, including "designing and introducing an internal training program, communications strategy, performance management system, improved M&E system and contracting process with the subcontractors."

Payment Service Provider—MTN

"MTN does not make payments. We avail the system to make the [electronic] payments. We give remote access to the secretariat to upload a payroll and make payments to 95,000 recipients of 14 districts. This helps accountability because we don't control the payments at all. Their accountants do the authentication, upload the payroll and push a button. That's the easy part."— Head of Mobile Money, MTN

MTN's relationship with SAGE has evolved over time, shifting and adjusting the realities of the mobile money system and the system in house to support it. Government-to-person payments are not traditionally part of the mobile money platform, which forced MTN to develop new payment solutions for SAGE at the program's conception and adjust the scheme over time. MTN staff recognize that the process has not been easy, but that in the end, they believe it is worth it.

MTN staff see a financial and strategic business case for partnering on SAGE. They acknowledge that they are able to make some revenue from the fees collected from SAGE, which amounted to approximately 3.5 percent of the value of each transfer,[18] including the amount of one withdrawal fee, split between MTN and the agent.

In late 2013 SAGE increased the monthly value of the payments from UGX 24,000 to UGX 25,000 and then shifted to bimonthly payments of UGX 50,000, paying half of recipients each month. This led to changes in the fee structure: the transfer fee rose from UGX 300 to UGX 390 and the withdrawal fee from UGX 700 to UGX 1,100. SAGE also agreed to provide additional financial support to operational costs amounting to UGX 273 per recipient per monthly cycle, as well as

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[18] As at December 2013.

monthly support for SAGE-related staffing. The total cost of UGX 1,763 per recipient for the transaction, withdrawal and operating fees is over 50 percent higher than the previous fees. However, moving to bimonthly payments means the cost as a proportion of the payment amount decreased from 4.2 percent to 3.5 percent, and the amount that SAGE pays each month is less than under the previous structure.[19]

Tables 4a and 4b present the previous and current fees that SAGE paid and pays MTN.

Table 4a. Previous MTN Monthly Fees for SAGE (estimate, assuming monthly payments of UGX 24,000 to 95,000 recipients)

Transaction Fee: UGX 300 per UGX 24,000 transaction	UGX 28,500,000
Withdrawal Fee (split between MTN and agent): UGX 700/transaction	UGX 66,500,000
Dedicated Staff for SAGE (program manager and accountant)[a]	UGX 10,600,000
Total per Month	**UGX 105,600,000** (**US$40,851**)
a. The SAGE program pays a separate fee for MTN's staff—a program manager and accountant—who are dedicated to SAGE.	

Table 4b. Current MTN Monthly Fees for SAGE (estimate, assuming monthly payments of UGX 50,000 to 47,500 recipients)

Transaction Fee: UGX 390 per UGX 50,000 transaction	UGX 18,525,000
Withdrawal Fee (split between MTN and agent): UGX1,100/transaction	UGX 52,250,000
Contribution to operating expenses (273/transaction)	UGX 12,967,500
Dedicated Staff for SAGE (program manager and accountant)[a]	UGX 10,600,000
Total per Month (47,500 payouts per month)	**UGX 94,342,500** (**US$36,496**)
a. The SAGE program pays a separate fee for MTN's staff—a program manager and accountant—who are dedicated to SAGE.	

However, MTN also acknowledges that its payment modality nearly eliminates the net amount of revenue it derives from the partnership. MTN has had to buy vans, contract third parties and agents to do the pay-outs, and buy batteries and antennae for the Equatel pay phone used for payouts. They described the following major challenges to executing the payment scheme:

- **Presence of agents.** MTN argues that the districts where payments occur require an influx of money even though it is not profitable to set up a mobile money agent, and it is a "logistical nightmare" to transport large amounts of cash there. Or, where agents exist, there is not always a way to supply them with the necessary liquidity for all the payments. Thus, MTN had to create the ability for the agents to cash out, and starting in 2013, MTN contracted franchise dealers (master-agents) to move physical cash to subcounties to make payouts.
- **Issues resulting in manual payments.** There have also been some instances in which MTN could not execute e-payments, such as network outages, or a period in which the staff could not issue SIM cards/e-wallets because of a faulty batch of cards. In such cases, MTN makes manual payments, which is a cumbersome and laborious process that is very much outside of

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[19] This cost includes the transaction and withdrawal fee and, in the new fee structure, the contribution to operating expenses. It excludes the cost for dedicated staff for SAGE.

the business model underpinning mobile money or the core business practices of a mobile network operator.
- **Reconciliation of manual payments.** A manual reconciliation process results in high overhead costs. MTN is working to automate manual payment reconciliation to bring the burden of data management inherent in manual payments to a more manageable level.
- **E-payment process.** MTN agrees that it should not take a recipient and agent three to four minutes to complete a payment process and is trying to determine the necessary modifications to increase the efficiency of the process. In many cases, the agents simply input the PINs themselves to speed up the process; MTN headquarters, however, admits that this is not generally considered best practice.
- **Lack of savings options.** Finally, MTN staff lamented the limited saving functionality inherent in the SIM-based payment mechanism. They reportedly need to use the Equatel phone system because "the business model for mobile money agents isn't working out."

As costs have escalated, MTN has sought to renegotiate with SAGE, including increasing the withdrawal fee per payment from UGX 700 to UGX 1,100 (US$0.26 to US$0.43); increasing the transfer fee from UGX 300 to UGX 390 per transfer; and demanding a contribution to unexpected operating expenses amounting to UGX 273 per transfer. MTN staff also report evaluating their own internal efficiencies to consider how to make the partnership work over the long run, such as using biometric verification with POS terminals at more agents and/or outsourcing the payment process execution to a third party. However, despite several adjustments and a good faith effort to seek workable solutions, MTN expressed serious concerns about rolling out the current payment scheme at scale in the country, stating that "the cost [will be] humongous." Moreover, the MTN staff see an opportunity. They claim that recipients do not want to liquidate their mobile wallets every month and that there is demand for keeping money in the electronic loop. Unfortunately, Equatel cards lack broader electronic functionality, so MTN is exploring other card options as a longer-term solution to meet the demands of the recipients in a way that is more commercially sustainable.

Over the pilot period and after several challenges internally and across the SAGE partnership, MTN offers one core lesson: communication is key. It state that several challenges could have been pre-empted and/or resolved by working as closely as possible with the SAGE Secretariat. The Acting Head of MTN Mobile Money described the situation: "*What we saw when we inherited this project [after internal management changes] is that communication with SAGE wasn't happening. It can't just be something extra that the MNO gives. Social gains are important even if [it is] less [a] focus for the business than commercial gains. Having even one person [exclusively] focused on this program [is likely to] ensure constant sharing of reports and communication [among] all parties. This can't work if it's just a partnership on paper.*"

An area account manager in the Apac district listed the benefits of being part of the SAGE program as (*i*) corporate social responsibility and brand image; (*ii*) new revenues for MTN (and agents); and (*iii*) cross-sell opportunities of MTN's other mobile money products. He acknowledged that the network is an issue, but also stated that MTN is building new towers nationally, five of which are specifically in response to SAGE.

Field Staff
Field staff in both Apac and Kiboga were quick to list the mobile network as their biggest challenge. While Apac staff acknowledge MTN's efforts to improve the network, Kiboga staff question MTN's

ability to meet the current demand and eventually scale up, stressing that the program has already been struggling with network issues for two years.

In addition to network problems, staff encounter recipients who have scratched or lost SIMs; the community development officer for one district estimated three to four recipients (out of about 7,000 total recipients per district) lose their cards each month. MTN has not been quick to replace these SIMs, leading to months of backlogged payments for recipients. Often, the staff move the recipient to manual payments so that he or she can at least receive the monthly payments going forward; however, the recipient can recover his or her backlog of payments only once he or she receives a new SIM. While staff in Apac acknowledge that the e-payment system has the benefit of recipients being able to save on their accounts, few recipients actually save this way. In Kiboga, staff have discouraged recipients from using their accounts to save to reduce the potential for agent fraud. (If the recipient saves some money in his or her account and wants to withdraw more than the monthly amount, staff are concerned that agents might to keep a portion for themselves.)

Staff also expressed concern that MTN seems to "own the SIM cards," and the recipients are just the custodians. MTN does not own the SIM card in any respect, but staff expressed this concern, noting that recipients do not typically know their PINs ("old people can't remember PINs"), are illiterate, and do not know how to use the MTN phones, thus leaving the integrity of the process to rest with the agent. Parish chiefs are present at the payouts, and Kiboga staff have observed tension when parish chiefs want to see how the agents are transacting.

While recipients of both electronic and manual payments find the payment process to be quick (as described below), staff find that manual payments are faster and require fewer resources. In Kiboga, to increase the efficiency of the payment process, staff alert two parishes per day (over a four-day period for eight parishes) to pick up their payments. This allows agents to manage liquidity and to process all the recipients' payments quickly. However, staff assert that they can serve all these recipients manually in one day, reducing the use of resources. Additionally, staff reported stories of agent fraud—specifically, agents withdrawing the payments of recipients who did not withdraw their payments one month—which is part of the reason SAGE staff or implementing partners must be present during electronic withdrawals. Whereas manual payments might require one staff person, e-payments require two. The staff's concern for monitoring agents leads them to question the sustainability of the system and the long-term possibility of monitoring all agents, as the program scales up, if recipients continue to rely on agents to enter their PINs.

As a result of network challenges, lost and scratched SIMs, and efficiency of the manual payment system, staff in Apac and Kiboga prefer the manual payment system.

Despite this preference, Apac staff in particular spoke of moving all recipients to the electronic system eventually, working with MTN to improve the network. Staff demonstrated their ability to manage complaints (in the monthly monitoring reports) and follow up on outstanding issues related to agents, lost SIMs, and missed payments. However, in both districts, staff do not see the current system as sustainable, particularly given network challenges; if they shift all pay points to areas where network coverage is stronger, this may increase the distance some recipients must travel to withdraw their money. Kiboga staff strongly emphasized their desire to shift all recipients to manual payments, citing the experiences of recipients, implementing partners, and staff, all of whom find the manual payment system to be easy and "friendly."

Agents

An agent interviewed in Apac acknowledged network challenges and admitted he prefers the manual payments so he does not have to find a bank to reimburse him for his electronic float after each pay period or worry about the reliability of the mobile network. Other than network and float challenges, the Apac agent finds the system straightforward, with no liquidity constraints in Apac Town, where he is close to several banks. An agent in Kiboga district also discussed her concerns about the network but does not worry about liquidity, which is provided by the master-agent that oversees her operation. Both agents like the SAGE program because of the additional income it provides and the "cross-sell" potential of these recipients who are "now our friends."

Recipients

"Even when you close your eyes, you know SAGE will come…It is not dependent on the weather."—SAGE SCG recipient in Kiboga district

"We are not the ones use [the SIM]. We did not learn [how to use it]…We do not use the technology."—SAGE SCG recipient In Kiboga district

Our discussions with recipients considered the experiences of SAGE recipients of SCG and VFG receiving electronic and manual payments in Apac and Kiboga.

Our focus group and individual discussions with recipients included the following:
- Men and women receiving SCGs through e-payments in Apac District (northern region)
- Men and women receiving VFGs through manual payments in Apac District (northern region)
- Men and women receiving SCGs through manual payments in Kiboga District (central region)
- Men and women receiving VFGs through e-payments in Kiboga District (central region)

After each group discussion, we met individually with two recipients to gain more in-depth knowledge about their experiences with SAGE, their cash flows and money management techniques, and how they integrate the SAGE payments into their cash flows.

In sharing their experiences about the SAGE program, recipients were keen to express their appreciation to the government for receiving money. Recipients are pleased to have reliable payments coming every one to two months—depending on whether they receive the payments manually or electronically; most groups we met ranked the SAGE payment as their most reliable source of income, more so than their farming, livestock, and small business income sources.

The number one issue for all e-payment recipients—as well as local SAGE staff and implementing partners—is the unreliable and, in some areas, nonexistent mobile network coverage. For those paying to travel to the pay point, returning the next day costs an additional transportation fee. SAGE staff, expressing concern about the network and sending recipients home only to return the next day, sometimes postpone payments to the next month if the network is down so recipients avoid additional transportation expenses.

Both e-payment and manual payment recipients enjoyed the speed and efficiency with which they receive their payments. (In the case of e-payment recipients, this excludes times when the network is down.) The field staff insist that manual payments are faster than e-payments, as the manual

payment process does not require the SIM and PIN process; no recipients interviewed had used both methods and thus could not compare the two methods directly.

Recipients' feedback suggests that the speedy e-payment process is due to agents' efforts to serve all recipients as quickly as possible, even if it compromises recipients' "ownership" of their SIM cards and PIN secrecy. Despite some training on the use of PINs and on the public phones used for SAGE payments, most recipients admitted that they either do not know their PIN or are aware that it is a generic PIN such as 0000 or 1234, and that the agent enters the PIN for them. Two groups in particular mentioned that MTN "trained" them in a large group on how to use the PIN and phone, but when MTN staff asked them to try using the public phone, they "failed" and thus the agent now transacts for them. (The regional administrator overseeing the program said that this event was not a training session but rather only a "demonstration" of the process.) In Kiboga, one group also explained that the agent requires everyone to provide a fingerprint on the payroll list, rather than having the option of signing as the program mandated. However, recipients overall did not express concerns about not knowing their PIN or not being able to sign if they are able, as long as they receive their full amount efficiently.

Recipients' awareness of how much they are to receive each pay period appears to reduce the potential for agent fraud or other challenges. Among the recipients, only one group spoke about an agent withdrawing recipients' money for himself during months when recipients were unable to withdraw their money. (However, Kiboga field staff reported several other instances of problems with agents and implementing staff, as discussed above.) Recipients reported no challenges of paying extra fees or "kickbacks" to implementing staff or agents, or of agents having liquidity issues or harassing recipients, despite some feedback from staff concerning agents harassing recipients.

While recipients praised the speed of the payment process, recipients in Apac, particularly those manual payment recipients we spoke with, arrive at the pay point early in the morning, only to wait until noon or later for the agents to arrive. Getting paid in the afternoon, recipients expressed concern about reaching home at a reasonable hour.

In contrast, manual payment recipients in Kiboga explained that agents arrive before them at the pay point and begin serving recipients as the recipients arrive, with the whole process taking "no more than one hour." However, Kiboga recipients are concerned with the cost and distance of reaching the pay points—up to eight kilometers, costing up to UGX 10,000 (US$4) round trip. Aside from network problems, distance is the biggest challenge to those in Kiboga.

With distance as an issue, Kiboga SCG manual recipients told varying stories about using alternates to pick up their money. The men, while expressing concern over the price to reach the pay point, admitted that they would prefer to pay a motorcycle driver to take them to the pay point for a flat rate rather than use an alternate, who could take more money than the motorcycle driver upon getting the money. Two women explained that they rely on their son and grandson to withdraw their payments for them, but the son and grandson return the full amounts to the women each time. Other women reported that they do not have alternates because they have not yet found someone they can trust to deliver the full amount to them. Other recipients in Kiboga and Apac reported that they might pay the alternate's transportation cost to withdraw the payment.

In addition to informing recipients individually about the next payment dates, a local government official in Apac announces payment dates on the radio, resulting in everyone in the communities

knowing the recipients will be paid. Similarly, in Kiboga, since the radio signal is not reliable, SAGE implementing partners announce the payments in trading centers using megaphones, in addition to alerting recipients individually in their villages. While this helps some recipients access shop credit leading up to payment days, it also leads to neighbors questioning recipients about when they are being paid. Despite the questions, recipients do not feel insecure with the money—in part because the amount is not so large as to cause too many problems—and are not typically pressured to give the money to anyone else. Other than one instance of a recipient being bullied for a portion of his money, recipients said security is not an issue.

Those manual recipients who get their money bimonthly rather than monthly admitted that they appreciate receiving the larger lump sums every two months, which can help them invest in livestock and pay for household items, medical expenses, and school fees. Because they receive their full amounts automatically at the pay point, manual recipients do not save any money with the program (and are not offered an option to save). In Kiboga, some e-payment recipients explained that they have tried to save on their SAGE accounts. In one case, an agent told a recipient that she should save with her village savings group instead. In another case, an agent told a recipient that it is cumbersome for the agent if the recipient chooses to save on her account. When asked whether they save on their SAGE accounts, other e-payment recipients in Kiboga said they were not aware it was an option. SAGE staff in Kiboga said that they discourage recipients saving on their SAGE accounts, as a result of past cases of agent fraud.

5. Lessons Learned from the SAGE Experience

"We thought the networks would be strong. The engineers said they could focus the networks on payment days to make it work well, but it hasn't been effective. Our question now is: what size does the network need to be able to make this work?"— Head of Social Protection Secretariat, MGLSD

a. Determine the Country's Readiness for Electronic Social Payments. In Uganda's case, the PSP is working to develop its mobile money system to serve SAGE recipients and to address network issues by providing short- and medium-term alternatives to the Equatel pay phones. The efforts of the program and the PSP to push ahead with payments has led recipients overall to receive their payments efficiently and on time nearly every month (though always with isolated incidents of the network being down during pay-out periods).

b. Understand the Feasibility for E-Payments Scheme Designs in a Particular Context. The financial and mobile network infrastructure in Uganda is limited and so too was the viability of most proposed payment methods for SAGE. Conducting a rigorous and technically informed procurement process will help ensure that the actual costs and implications of any models being proposed by the various bidders are thoroughly evaluated. Also, conducting adequate supply and demand-side research will reduce (though not eliminate) the need for constant payment scheme modifications.

c. Be Flexible and Responsive. Through a design and implementation process rich in detail but rattled by false starts, roadblocks, and unforeseen challenges at the PSP and government levels, SAGE Secretariat and program staff continually adjusted to emerging realities on the ground. SAGE leadership emphasized the importance of *partnering with* a PSP rather than outsourcing or buying an off-the-shelf product. They also underscored the need for program managers to provide support, in time and effort if not money, for extensive systems development. However, driven by the pressure of the country's future social protection system that depends on the pilot's success,

the program has struggled to find balance between maintaining a strong partnership approach while also maintaining accountability for delivering against contract performance indicators. Overall, the program remained flexible, responsive, and committed to finding ways to make the payment scheme work.

d. Consider PSP Capacities and Motivations. PSPs, particularly in low-income or low-infrastructure contexts, may lack the capacity to play the independent role envisaged. The division of labor between the program and the PSP may need to be negotiated, and the program may need more capacity in this area than originally anticipated. Also, the program securing senior management support within the PSP based on a long-term vision rather than short-term commercial motivations may help to maintain the PSP's commitment as the PSP develops and adjusts systems and capacities to the realities on the ground. The PSP's capacities and motivations will influence not only its roles and responsibilities, but also its performance and dedication over time.

e. Consider Recipient Financial Capabilities When Managing Transactions. Recipients' feedback suggests that what they found to be a quick e-payment process[20] is due to agents' efforts to serve all recipients as quickly as possible, even if it compromises recipients' "ownership" of their SIM cards. Yet, staff expressed concern that MTN proverbially "owns the SIM cards," and the recipients are just the custodians since they do not typically know or use their default PINs, are illiterate, and/or do not know how to use the MTN Equatel phones.[21] The integrity of the process thus rests on preventing collusion between the agents and the local government staff who oversee payments, as well as recipients' knowledge of their rights. While this practice may mitigate some delays and hurdles to getting e-payments to the recipients as quickly as possible, it may also fracture the recipients' capacity to learn and own their own "account," a core objective of the program. Also, the fact that recipients are allowed to use the default PIN further undermines any message about the importance of a PIN. In considering the sustainability of the payment scheme, the ownership and capacities of recipients to effectively transact in the scheme become critical.

f. Get the Politics Right. SAGE Secretariat is acutely aware of the fragile state of the pilot: it was launched without universal political buy-in and its future rests in the government's decision whether or not to support its establishment as a permanent social security system in the country. The program has seemed to use the policy pilot opportunity to its political advantage. They marketed well to raise awareness of the new government program, involved and trained local government officials to gain their buy-in and also help them benefit from the program's political sunshine, and they branded closely with MTN to increase performance pressure on a major utility company. The program has benefited from—but has been able to resist—pressure to roll out beyond the 14 designated districts before the end of the pilot phase: other subcounties are increasingly demanding SAGE, which in turn increases the likelihood that the program will secure policy level commitments.

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[20] Head office and field staff insisted that the e-payments are not "quick" compared to manual payments. Recipients using e-payments, however, found the process to be "quick" as long as the network works.

[21] Since the time of research, SAGE has centralized the SIM registration process such that the program effectively owns all of the SIMs and recipients are just authorized users of SAGE SIMs.

g. Ensure the Whole Program's Commitment to E-Payments. Local staff and implementing government partners' support of e-payments has weakened over time, as manual payments have proven "quicker and easier." Local staff suggest that the ease of the manual payments for recipients outweighs the benefits of the card account, which include traceable money flows (thus presumably less leakage), slightly less risk to recipients, less liability for government, and the ability to store value. However, local staff also are not in the position to evaluate the value for money proposition that the head office is forced to consider: MTN's delivery costs are a fraction of what any other bidder had proposed. While the manual payment system has been necessary in Uganda as kinks in the e-payment process are resolved—and perhaps Uganda was not quite ready for e-payments when it launched the pilot—e-payments are necessary in the long run for a transparent, efficient social protection system in an environment prone to corruption and leakage.

6. Conclusion: The Future of E-Payment Cash Transfers in Uganda

"The right thing to do in Uganda is to set up a social protection system. So you have to keep this ultimate objective in mind when thinking about risks and tolerance for [challenges of the payment scheme] over the short and medium term."— SAGE Program Manager

"If we do a big national scale-up plan maybe we can use mobile phone and they can go to agents any time. For now in this pilot though we are testing the system and there are certain days for payments. We want to be sure of the registration and management systems, but maybe the future will be real mobile money."— Head of Social Protection Secretariat, MGLSD

"We see growth and we are planning for it."— Head of MTN Mobile Money

To make the SAGE program payment into a limited-purpose[22] mobile money wallet—where transactions could happen anywhere in Uganda with any agent—will require major investments in network development at MTN even as the program is simultaneously building its operations and processes toward a national social protection program roll-out. While recipients are receiving their payments on time now (except for when the mobile network is down), the e-payment system does not fully achieve its mobile money-based financial inclusion objective: though offering a store-of-value option, the Equatel system discourages recipients to save through the method, given the limited availability of pay phones, the short window of time of each pay period within which to withdraw SAGE payments, recipients' lack of understanding of how to use the system, and their reliance on agents to help them transact. The program's limited recipient training means that agents largely control the payment process (e.g., entering the PIN and operating the phone).

As the program gears up for the likely nationwide roll-out after 2015, the SAGE Secretariat and field staff acknowledge that the current payment approach is not optimal. Maintaining current processes and still operating efficiently will be hard when all senior citizens are included. For instance, many districts call each recipient one by one to complete their SIM transactions and receive their payments, which can take several minutes each. Moving to all senior citizens in all districts will require additional investment in staff capacity, IT system capacity, and agent management. Aware of this, SAGE and MTN have articulated their visions for moving SAGE into its next, larger phase. In the next five years the GoU will set up a social security administration similar to the South Africa Social Security Agency. The government intends to recruit "competent, results-

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[22] See footnote 2.

oriented staff" but also acknowledges it will require additional "high level technical support" as it transitions from a pilot where payment was funded and managed externally (from DFID to Maxwell Stamp) to a fully government-operated pension system.

MTN is thinking ahead, both in terms of the SAGE roll-out and its mobile money offering in Uganda overall, though its continued involvement in SAGE is not guaranteed, particularly as the government assumes more control of the program processes and vendors. Staff discussed plans to extend the network, acknowledging the likely entrance of new competitors, such as Safaricom. They are examining how to improve the agent network and are looking into POS and biometric systems, which they believe to be a good payment solution for SAGE. In addition to building 15 new towers in the country, five specifically for SAGE, MTN has also added extensions of Equatel antennae at pay points. Finally, MTN has not only received a grant from the Bill & Melinda Gates Foundation to expand mobile money to rural areas, but it is also involved in an increasing number of partnerships with donors and development agencies, such as the World Food Programme, Red Cross, UNICEF, and GiveDirectly, who are "eager to remit donor funds in an auditable manner."

Overall, the program understands that moving from pilot to scale is likely to be fraught with challenges and uncertainties: the infrastructure needs to be improved, new independent agencies need to be developed, and sufficient resources need to be committed. Aware of these risks, the program is preparing for the future. If the program rolls out, it intends to reach 1 million households over the program's second five years. Continued support from DFID and the Ministry of Finance indicates that the program may be progressing toward its objective of proving that social protection payments can work in Uganda.

Annex 1. List of Interviews

Name	Position	Organization
Andrew Rugamba	Acting Head of MTN Mobile Money	MTN
Angela Nakuya	Agent Training Manager	MTN
Brian Katingo	Business Planning Manager, Mobile Money	MTN
Caroline Pulver	Senior Associate	BFA
Dalia Dean	Program Manager, BMGF accelerator program	MTN
Fred Merttens	Monitoring and Evaluation Lead	OPML
Ian Foster	Finance & Admin Manager	SAGE
Peter Ochen	Head of Treasury	MTN
Pius Okello*	SAGE Operations Manager	SAGE
Selwyn Jahoma	Former Director	SASSA
Stephen Barrett*	SAGE Program Manager	SAGE
Stephen Kasaija*	Head of Social Protection Secretariat	MGLSD
Stephen Kidd	Senior Social Policy Specialist	Development Pathways
Local staff and government partners in Apac and Kiboga districts	Field Staff Chief Administrative Officers Community Development Officers	SAGE
MTN staff and partners	Agents Lira Branch Area Account Manager	MTN

* Indicates the interviewee also responded to a program or PSP questionnaire.

Annex 2. Acronyms

AusAID	Australian Government Overseas Aid Program
DFID	Department for International Development
ESP	Expanding Social Protection
GoU	Government of Uganda
HSNP	Hunger Safety Net Program
MFI	Microfinance Institution
MGLSD	Ministry of Gender, Labor and Social Development
MIS	Management Information System
MNO	Mobile Network Operator
PSP	Payment Service Provider
SACCO	Savings and Credit Cooperatives
SAGE	Social Assistance Grants for Empowerment
SCG	Senior Citizens Grant
UNICEF	United Nations Children's Fund
VFG	Vulnerable Families Grant

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