



Digital Client Engagement:

Interactive Voice Response (IVR)

July 2019

DRAFT REPORT



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1 Summary

Digital technology has the potential to transform lives, to link people across vast geographic distances, and to open vast worlds of information, services, connections—but only if one has access. Opportunity International (Opportunity) is helping people in Africa to experience the benefits of using digital technology to access financial services with innovative high-tech, high-touch solutions that generate high impact. Opportunity tested one such innovation in Ghana and Uganda between 2017 and 2019: Interactive Voice Response messaging (IVR). Recorded messages in local languages were sent out to clients to stimulate positive saving and borrowing behavior and raise awareness of their rights as clients. Clients were given options to make a commitment to save, to request more information, or to interact, for example, by selecting their preferred language. The messages were sent to 46,671 savers in Ghana (60% women) and 8,009 rural clients in Uganda (38% women). The main positive results of the test were the following:

- **High engagement:** The rate of clients listening to messages was higher than anticipated and higher in Uganda, where only rural areas received messages. The vast majority of clients listened to at least one message, 78% in Ghana and 88% in Uganda, which focused on rural areas. On average, 25% of clients listened to any given call in Ghana, and 48% in Uganda.
- **Low Gender Gap:** IVR was effective for reaching women, compared to other digital finance channels. The gender gap for this IVR test was 4-6%, lower than the gender gap for mobile money, which is 17% in Ghana and 11% in Uganda.
- **IVR Stimulated Increased Savings Balances:** There was a positive correlation between clients increasing savings balances and the number of messages clients chose to hear, particularly for less active savers in Ghana and savers without loans in Uganda. The average balance change for IVR listeners (of five or more messages) was double that of non-listeners.
- **Positive Returns from Savings Mobilization in Ghana:** Each cedi spent on external IVR service contacts generated an additional GHS 2.7 in savings account balances in Ghana. (Data was not available for Uganda.)
- **Positive Benefits for Customer Relations:** Clients and staff reported that the messages enhanced customer relations: clients appreciated being acknowledged and attended to by their financial institution, and staff appreciated the extra tool for engaging clients.
- **Potential for Client Understanding:** Based on a limited test of clients interacting with IVR (by pressing a button on their phones in response to a question), IVR has the potential for use as an efficient customer survey tool. The average response rate of 10% was within industry norms (now 10% in the US). It is unclear, however, whether those responding and not responding had similar characteristics, or if—for example—less digitally engaged clients were the ones who did not respond, due to low familiarity with the technology.

Some evidence also pointed to IVR's lack of influence over loan behavior and towards other factors being significantly more influential over client behavior, including the macroeconomic environment. (For details, see Table 1.)



The IVR test revealed some lessons that were related to the learning curve of using IVR and others that have strategic implications for Opportunity and others seeking to deploy IVR for financial inclusion. For example, given the delicate technological ecosystem, it is a good idea to start messaging on a small scale with simple message options and build up to larger scale with more complex messaging, such as surveys or varying messages for different target segments. Additionally, it requires significant, ongoing effort to craft appropriate, compelling messages; design and manage the technology to deliver customized messages to specific client segments; and analyze client responses for quick message adjustments. IVR messaging must be sufficiently resourced in terms of technical and creative capacity, leaders with decision-making authority, IT systems and expertise, partnerships with mobile network providers or IVR experts, and input from multiple stakeholders: financial education, marketing, digital finance, deposit management, and credit management. Based on this promising initial test, however, Opportunity is continuing to pilot additional iterations of IVR for the above and expanded purposes—including the delivery of agricultural information and helping clients use cell phone banking services. As use cases yield positive results, the business case for IVR as an integral tool for financial inclusion and banking operations will need to be more thoroughly assessed.

Table 1: Quick Facts – IVR in Ghana and Uganda

Country	Ghana	Uganda
Financial Institution	Opportunity International Savings and Loans (OISL)	Opportunity Bank of Uganda, Limited (OBUL)
Objectives of IVR	Positive savings behavior; financial knowledge	Positive savings and loan behavior; financial knowledge
Target Clients	National: all 36 branches Savers: <ul style="list-style-type: none"> • Low-balance (active) • Less active • Inactive 	Rural: 5 branches <ul style="list-style-type: none"> • Borrowers in arrears • Borrowers in good standing • Low-balance (active) savers
Number of Clients	46,671 (60% female)	8,009 (38% female)
Timeframe of Messaging	<ul style="list-style-type: none"> • Dec 2017 – Oct 2018 • 23 weekly messages 	<ul style="list-style-type: none"> • July 2018 – Feb 2019 • 23 weekly messages
Client response*	<ul style="list-style-type: none"> • 78% listened to at least 1 message; 23% listened to at least 10. • On average, 25% listened to any given call • The average number of calls listened to was 5.7 • 6% more men than women listened to at least 1 call; 	<ul style="list-style-type: none"> • 88% listened to at least 1 message; 58% listened to at least 10 messages • On average, 48% listened to any given call • The average number of calls listened to was 10.4



Client Behavior Change	<p>compared to a gap in mobile money usage of 17%</p> <ul style="list-style-type: none">• 17% of all clients exhibited positive behavior, 22% of clients with working phone numbers.• Positive correlation between clients increasing savings balances and the number of calls clients listened to, especially for less active and inactive savers• IVR listeners increased their savings account balances by twice as much as non-listeners.• One GHC in external IVR service costs generated 2.7 GHC in savings account balances.	<ul style="list-style-type: none">• 4% more men than women listened to at least 1 call; compared to a gap in mobile money usage of 11%• 25% of clients exhibited positive behavior in terms of increased savings account balances and bringing loans up to date.• Positive correlation between clients increasing savings balances and the number of calls clients listened to, especially for low-balance savers without loans• There was little difference in behavior change between branches receiving IVR and comparison branches
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*In Ghana, listening was defined as listening to 20 seconds or longer; in Uganda, it was defined as listening to at least 20% of a message.



2 Program Partners

This IVR messaging initiative was managed by Opportunity International with funding from multiple long-term partners in Africa including the Mastercard Foundation, the Caterpillar Foundation, the Cisco Foundation, and the Weberg Foundation. Various teams within Opportunity collaborated to provide multidimensional technical support: Digital Finance, Agricultural Finance and Knowledge Management. The implementing financial institutions were Opportunity International Savings and Loans (OISL) in Ghana and Opportunity Bank of Uganda, Ltd. (OBUL). Opportunity partnered with Viamo to deliver the IVR messages, track client responses, and provide strategic guidance on IVR as an intervention.

Viamo¹ is a global social enterprise improving lives through mobile solutions. Viamo connects individuals and organizations to make better decisions—envisioning a world where all people have access to the information they need to make decisions for healthy, prosperous lives and have meaningful relationships with governments, civil society, and businesses. For this IVR initiative, Viamo provided strategic advice, translated and recorded messages, delivered messages, and provided raw data on call responses.

Opportunity International (Opportunity): Since its first loan to a chicken farmer in 1971, Opportunity has served the economically disadvantaged by innovating to address the multi-faceted challenges of poverty. Opportunity is a global non-profit organization that has pioneered financial inclusion in developing regions, working at the forefront of savings-led banking, agricultural lending, micro-insurance, and education finance. Building on 47 years of experience, Opportunity continues to drive innovative solutions that effectively end the cycle of poverty for families around the world. Opportunity's Digital Financial Services (DFS) program provides an innovative, client-centered approach to extend financial services to persons living in poverty. The program is focused on Digital Inclusion, the effort to reach those not yet reached by digital services, which still includes the overwhelming majority of microfinance clients. Nearly 100,000 clients were engaged in Africa in 2018, bringing the cumulative over the past five years to 641,000 clients for the region. Opportunity's Agricultural Finance program (AgFinance) builds lasting improvements in the livelihoods of smallholder farmers, while tangibly strengthening local economies and food systems through accelerated financial inclusion. Opportunity strives to be a best-in-class provider of agricultural finance solutions that positively impact the lives of smallholder farmers (SHFs). As of 2018, Opportunity has helped seven partner financial institutions to extend a cumulative of nearly half a million agricultural loans, valued at over \$100,000 USD (constant). Opportunity leverages digital technology to deliver financial services to farmers too far away for regular trips to a physical branch.

Opportunity International Savings and Loans, Ghana (OISL): Founded in 2004, Opportunity International Savings and Loans, Limited (OISL) is a leading, mission-

¹ For more information on Viamo, visit their website: <https://viamo.io/>



driven savings and loans institution in Ghana. OISL has 43 outlets in 7 regions. As of December 2018, OISL served 526,443 clients (64% women), of which 46,478 had active loans. OISL offers clients business loans including group, individual, and small/medium enterprise loans; sector-focused loans in Education and Agriculture; a variety of savings products; and mobile phone banking, which it launched in 2015. OISL won seven performance awards in 2018, among them Technology Advanced Savings and Loans Company of the Year, Savings and Loans CEO of the year, Best Company in Projects Promoting Agriculture and Agri-businesses, and Sustainability and Social Investment Project of the Year. OISL has been a significant partner of Opportunity International since its inception.

Opportunity Bank of Uganda, Ltd. (OBUL): Opportunity Bank of Uganda, Limited (OBUL) is a leading savings and loans company in Uganda. Originally formed in 1996 under the name Faulu as a microcredit program, OBUL has been a Tier-2 Banking Institution since 2008. OBUL has 20 branches and 2 service centers throughout Uganda's four regions. As of December 2018, OBUL served 180,652 clients (46% women), 28,113 of which had loans. OBUL offers clients business loans including group, individual, and small/medium enterprise loans; sector-focused loans in Education and Agriculture Finance loans; a variety of savings products; and mobile phone banking, which it launched in 2014. OBUL has been a significant partner of Opportunity International since its inception.



3 What is IVR?

Interactive Voice Response messaging (IVR) enables communication with customers through audio messages that are delivered to a customer's mobile phone. Messages can be recorded and sent in multiple languages, and customers can respond to the messages by pressing numbers on their keypad. For this initiative, Opportunity partnered with Viamo, a global social enterprise with experience deploying IVR in Africa in the health, democracy, and agricultural sectors. Although there is research on the effectiveness of SMS messaging for financial inclusion,² the use of IVR is relatively new in Africa, particularly for financial inclusion.³ This Viamo-Opportunity partnership was Viamo's first foray into financial inclusion and Opportunity's first foray into IVR.

IVR offers the potential for engaging clients cost-effectively by combining the efficiencies of technology with some key benefits of human touch. In terms of efficiency, customers can receive information anywhere they have signal, at no cost to them. Institutions save time compared to traveling to visit customers. Additionally, the interaction leaves a data trail, enabling institutions to adjust messaging based on client feedback rapidly. In terms of high-touch, because customers hear a recorded human voice, the mood and the emotion behind IVR messages is more personally conveyed than in an SMS, for example.

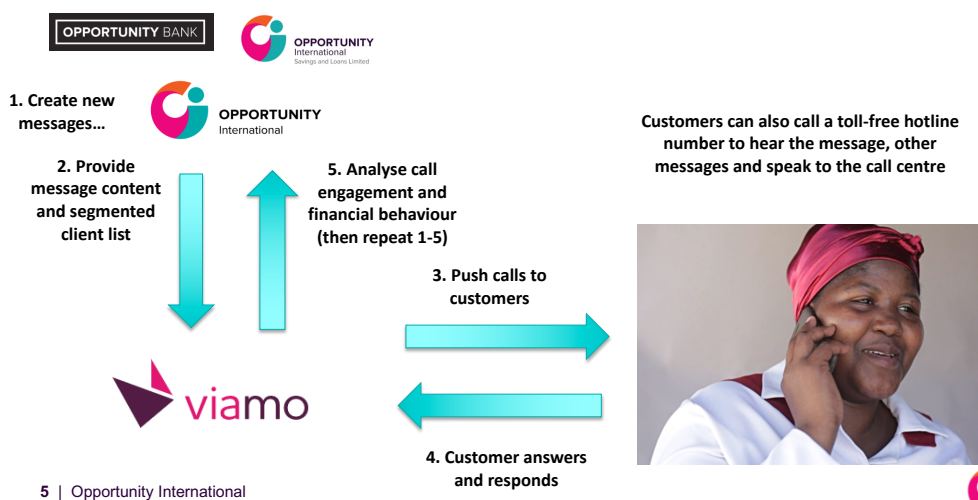
What's more, by interacting with the system, listeners can customize and drive their user experience. Using IVR also offers more frequent touchpoints between customers and institutions. Given that no reading is required, and messages are delivered in a language of the customers' choosing, IVR is particularly suited for reaching less educated, less tech-savvy populations. In this manner, IVR fits Opportunity's high-tech, high-touch digital inclusion strategy.

² Data and Desai, 2018

³ Stout, Corytel, 2019



Figure 1: The IVR Process



Opportunity Banks writes messages and provides Viamo with a client list divided into target segments, then specifies aspects of the messages. For example, the tone of the message or the time of day they should go out. Viamo hires actors to record the messages in intended languages. Viamo “pushes” the messages out in calls to customers’ cell phones. Customers respond by ignoring the call, hanging up immediately, or listening to the message. Customers can also trigger a callback from the system to listen to the message at any time. If they listen, they may also respond to prompts by pressing a button on their dial pad. Viamo provides Opportunity with data on client responses, which Opportunity uses as input when writing the next batch of messages.



4 What Were Opportunity's Hopes for IVR?

This IVR pilot test contributed to the goals of Opportunity's Digital and AgFinance programs. It forms part of Opportunity's high-tech, high-tech, high-impact digital strategy and represents one of Opportunity's innovations in leveraging digital platforms to extend agricultural finance to women. This IVR intervention focused on people facing a range of barriers to deep financial participation, including people in rural areas, women, and people with lower literacy or digital experience. Working in partnership with financial institutions, Opportunity seeks sustainable, scalable solutions. Thus, objectives for the IVR work related to both client and partner financial institutions, as follows:

1. To engage customers, especially women clients and clients with low literacy
2. To drive positive savings and loan-related behavior
3. To enhance financial knowledge of target clients

IVR and Opportunity's Digital and Agricultural Finance Strategies

The Digital Financial Services (DFS) program provides an innovative, client-centered approach to extend financial services to persons living in poverty. Leveraging the unprecedented spread of mobile and cellphone technologies throughout the developing world, Opportunity's Digital Inclusion Strategy aims to help clients become empowered to utilize their own digital device and obtain financial services (and other services) with greater ease and convenience. Efficiency gains and rapid dissemination by digital-assisted means allow for substantially greater client outreach and also for higher leverage of donor and investor funds in impacting client lives at significant scale. The program specifically targets underserved groups, especially women, who are still significantly underrepresented in terms of digital access and usage. The program elements aim to work with both established and emerging digital platforms, helping to integrate inclusion principles. Utilizing digital approaches such as interactive voice response (IVR), distinct client engagement activities are aimed at client education, alleviating dormancy, stimulate savings, or introducing new products.

The vision of the Opportunity's Agriculture Finance program (AgFinance) is to build lasting improvements in the livelihoods of smallholder farmers while tangibly strengthening local economies and food systems through accelerated financial inclusion. Opportunity strives to provide best-in-class agricultural finance solutions that positively impact the lives of smallholder farmers. As of 2018, Opportunity has helped seven partner financial institutions to extend a cumulative of nearly half a million agricultural loans, valued at over USD \$100,000 (constant). Opportunity leverages digital technology to deliver financial services to farmers too far away for regular trips to a physical branch. Opportunity is also testing innovations to more deeply engage female farmers in ways that are financially sustainable for partner financial institutions. IVR messaging is one such innovation.



The intervention's two financial institution partners held overlapping but somewhat different objectives for client behavior change, related to business and social goals. OISL in Ghana was primarily focused on changing client savings behavior and raising client awareness about their new cell phone banking platform. OBUL in Uganda addressed both savings and loan behavior and focused financial education on fundamental principles often covered in loan orientations, but deserving reinforcement due to ever-reducing time for in-person training. (See Table 2) Because this was a first-time experience, data was not available for establishing targets with any rigor. Rather, the evaluation of the pilot test sought to generate quantitative evidence on the effectiveness of IVR and qualitative insights to guide any future investment by Opportunity and practitioners with similar goals.

Table 2: Behavior Objectives of Financial Institution Partners

OISL, Ghana	OBUL, Uganda
<ul style="list-style-type: none">• Encouraging clients to save more• Reducing the rate at which clients become inactive• Reactivating inactive clients• Emphasizing good savings practices and use of mobile banking	<ul style="list-style-type: none">• Encouraging clients to save more• Encouraging timely loan repayment especially for borrowers in arrears• Emphasizing good savings practices, responsible borrowing, and consumer protection



5 What Kinds of Messages Were Sent?

IVR messaging to Opportunity's target market is relatively new in Ghana and Uganda, and it is unclear what "industry practice" from more developed markets is relevant and how key financial education or marketing messages normally delivered using other media will translate to IVR messages. Instead of replicating banking practices of IVR from other countries—which can often be quite stale—Opportunity, instead, worked to make the IVR messages relevant and add value to clients' lives in Ghana and Uganda. IVR messages were crafted by leveraging customer and staff input, and Opportunity's technical teams and partners brought their experience and creativity to bear in devising messaging style, timing, and content. Message creators used client response data and mid-point client feedback to adjust the messages further. The evaluation also highlighted additional lessons and advice. Opportunity specifically tested five message elements, with the following conclusions:

1. **Style, voice and tone:** Variety was appreciated, but for most content a positive—not silly—tone is appropriate.
2. **Length, frequency, and scheduling:** Customers seemed satisfied with the length of messages, which ranged from 15 seconds to just over a minute. Feedback suggested that 1-2 messages per week is appropriate. Controlling scheduling proved more difficult than anticipated, given current digital operating environments in Ghana and Uganda. However, clients also appreciated when messages were relevant to the time of the year.
3. **Instructions and call identification:** The first messages clearly identified the call as coming from OISL or OBUL and instructed customers to save the number. Instructions on how to listen to a message again or to opt-out were delivered by a different voice after the main message was over. Customers were informed that the calls were free for them. SMS messages were also sent in advance to alert customers about the upcoming voice message campaign.
4. **Content:** The salutation was as important as the content of each message, and variation was clearly appreciated both in topic and wording. Content that developed relationships, provided information, and prompted action were all valued. Finding the "sweet spot" between broad and narrow messaging was important for maintaining relevance.
5. **Process:** For technical and client engagement reasons, testing IVR with a small audience (10,000) first seemed to provide an opportunity to work out kinks and get feedback prior to national messaging. When messages were tested first in focus groups, prior to recording, the feedback helped narrow the options that were tried, which potentially saved cost. This feedback also enabled staff to pick winners for the first few messages, because first impressions matter. The focus groups also alerted staff to unanticipated responses. Focus group discussions continued to be important throughout the process—for the smaller and the national level tests.
6. These are elaborated below.

5.1 Style, voice and tone

Variety is appreciated, but for most, content with a positive—not silly—tone is appropriate. In Ghana, a character "Adjoa"⁴ in Ghana was easily absorbed; when providing feedback, customers spoke of Adjoa as if she were a real person. "I have finished paying off the car so now Adjoa will see me saving more!" enthused one client. In Uganda, each message started with a clear announcement that the messages is from Opportunity Bank, in order to assure customers that the communication is official. Staff

⁴ Adjoa is a typical Ghanaian name that means "Monday." It was selected because the messages were originally intended to be delivered on Mondays.



insisted that a serious tone be used with clients whose loans were in arrears. A general comment from clients during the evaluation was that more variety should be used in messaging so that the messages do not get boring. Viamo recommends testing messages in focus group discussions in advance of message design, which proved quite useful in Uganda.

Research Note: To analyze customer response to particular aspects of a message, it's best to vary the messages by **batch** rather than by message because customers will likely pick up a call based on how they liked the **previous** call(s). Surveys and focus group discussions are also critical to analyzing customer response because of this characteristic of the call-response data, and for understanding the reasons behind customer response.

5.2 Length, frequency and scheduling

IVR messaging is designed to deliver short, frequent messages (once or twice in a 1-2 week period) on days and times when customers are most available and ready to listen. Opportunity customers seemed satisfied with the length of messages, which ranged from 15 seconds to just over a minute. Participants in Uganda (primarily rural clients) listened longer on average than customers in Ghana (a mix of urban, peri-urban, and rural). Due to technological challenges, customers in Ghana received too many calls, too frequently, but customers in Uganda requested more frequent calls. Feedback suggests that 1-2 messages every 1-2 weeks is appropriate if the messages are varied. Controlling scheduling was more difficult than anticipated, given current digital operating environments in Ghana and Uganda. In Uganda, clients expressed a preference for Mondays, Fridays, and Sundays with a diversity of responses about the hour of the day. In both Ghana and Uganda, however, technology challenges interfered with attempts to narrowly schedule the calls.

5.3 Instructions and call identification

Because IVR is a new intervention and customers are sensitive to the possibility of fraud, instructions and call identification were approached with care. SMS messages were sent in advance to alert customers about the upcoming voice message campaign. The first messages clearly identified the call as coming from Opportunity and instructed customers to save the number. These initial messages also explained that Opportunity would be calling in the coming weeks with educational and money management tips. Instructions on how to listen to a message again, to opt-out (in Uganda only), or informing customers that the calls are free to them, were delivered by a different voice after the main message was over.

Despite these efforts, some confusion remained. One customer in Ghana complained that “Adjoa just talks and talks and doesn’t listen,” clearly not understanding that they were receiving a recorded message. When asked why they did not pick up the calls, some customers mentioned that they thought they would be charged money for the call. In the first phase of messages in Ghana, technological glitches resulted in repeat messages and problems with survey response messaging. Staff felt there may be challenges with customers responding to surveys, either not understanding the instructions because of being unfamiliar with the concept, or taking a bit of time to push the right button and the response time timing out. One recommendation emerging from these challenges was to launch a more coordinated campaign with deeper staff engagement and supporting communication via posters in bank halls, for example.



Another recommendation was to launch a smaller campaign first, as was done in Uganda, to ensure and build up technological capacity and to learn from customers via data analysis and either focus group discussions or interviews.

5.4 Message content

The salutation seemed as important as the content of each message. Focus groups in Ghana alerted message designers in Uganda that customers appreciated being told they were valued, and pre-messaging focus groups in Uganda provided an opportunity to test different opening and closing salutations. For the somewhat mature, rural customer base in Uganda, “Dear Esteemed Customer” and “Thank you for listening” were popular. For the more urban, somewhat younger and more media-connected Ghana customer base, “Hello, Valued Customer” and “Thank you for being our valued customer” were used, along with “Have a great week!”

Variation was clearly appreciated both in topic and wording. Content that developed relationships, provided information, prompted action and congratulated clients on taking action were all valued. Modalities differed and leveraged quotes, mathematics, cultural references, encouragement, and more. The intention of the Uganda and Ghana programs were slightly different, with the Uganda initiative being somewhat more focused on financial education, and the Ghana initiative somewhat more focused on stimulating savings and marketing OISL’s mobile banking platform. OBUL’s messages were issued from the financial education team, and OISL’s from Opportunity’s DFS team in partnership with OISL’s marketing team, which also influenced the tone and approach, although in both cases, there was input from multiple teams. Table 3 presents some examples from each partner in similar categories, illustrating the variation in messaging.



Table 3: Variation in Message Content

Category	Uganda Example	Ghana Example
Relationship/Client Protection	<p>Dear our esteemed customer, this is Opportunity Bank. Did you know that the way we treat our customers determines the success of our business. Always remember that:</p> <p>A customer is the most important visitor on our premise. She is not dependent on us, we are dependent on her. She is not an interruption in our work. She is the purpose of it. She is not an outsider in our business. She is part of it.</p> <p>We hope this message is helpful. Thanks for listening</p>	<p>Hello valued customer, this is Adjoa again, from Opportunity International. I'm calling to share a special message that's just for you: We at Opportunity International want to wish you and your family a very Merry Christmas! Thank you for being our wonderful client. (A different voice: Would you like to re-listen to the message? If yes, press 0.)</p>
Inspirational quotes / cultural references	<p>Dear our customer, once again thank you for banking with Opportunity Bank. I hope the following bible verse will inspire you to save regularly. Proverbs 21:20 says: "The wise store up choice food and olive oil, but fools gulp theirs down." Do you desire to have a good life for yourself and your children? If so, then save regularly any amount you can. Don't forget our savings slogan: "Pay yourself first every time you get money." The only safe place to save your money is in an account with a bank like Opportunity Bank.</p>	<p>Hello, this is Adjoa at Opportunity International bringing you tips to help you manage your business. To expand your business, you need a business asset. Give your working capital a boost by saving small amounts on profit weekly. Start by making a weekly deposit on the day of the week you were born. If you were born on a Saturday or Sunday, be sure to listen to next week's message on how to save on the weekend. We hope you enjoyed this message. You are our valued customer! (To re-listen to this message, press 0. Any response is free of charge.)</p>
General advice	<p>Dear our esteemed customer, this is Opportunity Bank. Having a household budget will help you control your spending to reach your goals. When making a budget, involve the family to reduce conflict and help you all stick together to reach your goals.</p> <p>Thank you, we hope the message was help full.</p>	<p>Hello valued customer, this is Adjoa again, from Opportunity International. Happy Monday! Did you know that savings can help you find greater success, happiness, and security in your future? For instance, let me share with you why I save. I am saving for my children's future education because this is important to me. When I think about my savings, I think about my children and I can just picture their beautiful faces. When you think about saving money, what comes to your mind? What do you want to save for? I'll call back next week to get your answer. Until next time, have a great week and don't forget to use Opportunity Mobile for easy savings! (A different voice:</p>



		Would you like to re-listen to this message? If yes, press 0.)
Specific technical advice/information	Dear our valued customer, thank you for giving Opportunity Bank an opportunity to serve you. Do you know the danger in missing one or two loan installments? It may not seem to be that bad, but the problem is that money accumulates, and it becomes harder for you to pay back the loan. For example, if your instalment for this week was 35000 shillings and you missed paying it, it means that next week you would pay two instalments at once, equivalent to 70,000 shillings, which may be harder for you to raise at once.	Hello valued customer, this is Adjoa again, from Opportunity International. It's Monday! Here's a fun yet tricky question! What's the relationship between savings and loans? Can you guess? Well, one way to look at it is that loans borrowed today are actually being borrowed from a person's future savings! This just shows how important savings are even when it comes to borrowing. That's all for now. Have a great week and don't forget to use Opportunity Mobile to help you save smartly and easily! (A different voice: Would you like to re-listen to the message? If yes, press 0.)
Marketing	Dear esteemed customer, congratulations! You have taken a long stride towards your financial destination by saving regularly with Opportunity Bank. Your savings with us are earning you more money through interest. Besides that, in the future, you can decide to invest your money in things like land, building rentals or buying a taxi to earn more money. "Your Money Working for You." Don't forget to save this week. Thanks for listening	Hello valued customer, this is Adjoa again, from Opportunity International. It's Monday and it's a great day to talk about Opportunity Mobile. Did you know that Opportunity Mobile allows you to access your bank account from anywhere by simply using your mobile phone? With Opportunity Mobile, you can check your account balance, send money transfers, and make cash withdrawals or deposits all without setting foot in a branch! Join the thousands of Opportunity International clients who have already registered and are enjoying the benefits of Opportunity Mobile. Oh, and did I tell you? Registration is easy. Just go to your nearest Opportunity International branch to get started with Opportunity Mobile today. You won't want to miss out on all these benefits. (A different voice: Would you like to re-listen to the message? If yes, press 0.)
Inducing specific action	Dear Valued customer, thank you for banking with Opportunity Bank. This is another kind reminder calling upon you to immediately pay off all the money in arrears, if you haven't done so by the time you hear this message. It is in your best interest that the loan is paid off without going to courts of law or selling of your security. We are looking forward to your positive response. For more information call your branch manager or visit the branch. Thanks for listening	Hello from Opportunity International. Big savings happens little by little. Simply save a little every week for a happy future. Set a savings goal today! Adjoa



Congratulations for taking action		Congratulations! By having a savings goal, you are on your way to having a more successful year! While it will not be easy to save regularly, just remember that savings is a habit. Take it little by little. Try to save the same amount every day or every week. And even when savings becomes difficult, don't give up! I will ask you soon if you started saving toward your goal. Until then, have a great week! (A different voice: Would you like to re-listen to the message? If yes, press 0.)
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5.5 Interactive messages

Calls requesting customers to interact with the IVR system were used sparingly due to technical challenges but were still valuable. One category of interactive messages was “operational.” Operational messages used interactive features to give customers the option to do the following:

1. **Hear the message again**
2. **Select a language:** The default language was the presumed dominant language in a targeted region, but customers were provided the option, in multiple languages, to select a different language. Initially, this was only asked on the first call, but later it was added on occasion.
3. **Stop receiving calls:** This was also provided on occasion in Uganda. To opt out of the messages in Ghana, clients could contact a staff member or call the hotline.

Challenge: Messages delivered in a language not understood by the customer.

Tip: Support IVR with additional promotion and communication via staff, posters in bank halls, prompting customers to tell their friends, etc.

OISL in Ghana deployed the customer interaction feature to conduct surveys and to encourage clients to make a savings commitment. Survey questions were asked on six calls, asking:

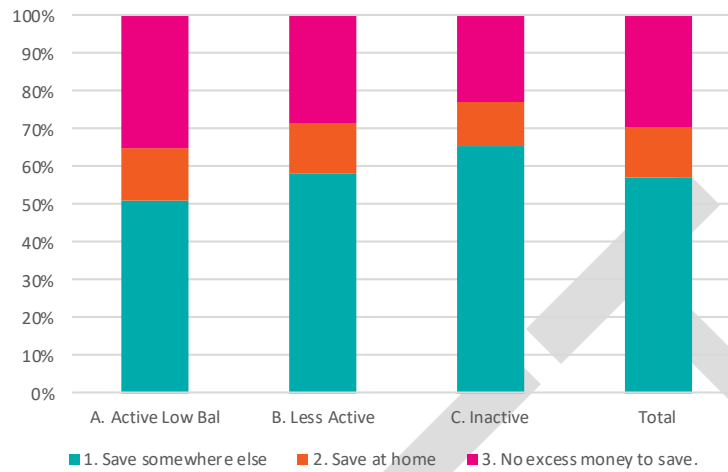
1. Do you feel valued by Opportunity Bank?
2. Do you have a savings goal?
3. How much is your savings goal?
4. Why haven't you been adding to your savings account lately?
5. Do you know about Opportunity Mobile?
6. How would you rate your experience with these calls?

In each case, customers were instructed to press a number corresponding to different response options. Customers might then receive a different additional message, depending on their selection. (See Figure 2.) On average, the response rate to these surveys was 10% of all phone numbers called and 27% of those listening to the messages. Although these rates are not below industry norms,⁵ the responses cannot yet be considered representative of the client base. Because the technology is new; some customer may not have responded because they were not yet comfortable with receiving recorded messages, and being asked to respond adds a layer of complexity. Still, the surveys provided useful information. For example, the majority of low-balance OISL savers responded that their accounts were low because they save somewhere else, and a larger portion also report that they have no excess money to save. This type of survey will be tested further with Opportunity clients.

⁵Response rates to telephone polls in the US fell from 36% in 1997 to 9% in 2016, and 6% in 2018. Pew Research, 2019.



Figure 2 IVR Survey Results, Ghana: Why is your savings account balance low?





6 Who Did IVR Target and Engage?

The rate of client engagement was higher than anticipated. As intended, women engaged at higher rates, compared to other digital initiatives. Engagement rates were higher in Uganda where the initiative focused on rural clients.

6.1 IVR messaging targeted low-balance savers, borrowers in arrears, and borrowers with smaller loans

In general, Opportunity tested IVR for reaching and changing behavior among underserved populations, with a particular interest in reaching women or other less literate clients. The target client populations in Ghana and Uganda, however, were fundamentally different. The Ghana IVR initiative was a national campaign focused on savings. OISL targeted over 46,000 low-balance savers (60% women) in three segments: active savers with low balances, less active savers, and inactive savers whose previous activity was between 9 and 18 months prior to the IVR start date.⁶ (See Table 4.) OBUL's IVR test was a rural test, targeting just over 8,000 clients (38% women) in five rural branches with intensive agricultural finance programs: Mityana, Soroti, Mubende, Hoima, and Masaka. OBUL's objectives were also broader--encompassing financial education and positive loans behavior as well as positive savings behavior. Thus, OBUL's client segments were defined as borrowers in arrears, borrowers in good standing with low balances, and clients with low savings balances but no current loan.⁷ (See Table 5.) It should be recognized that a portion of clients who appeared to be low-balance savers may, in fact, have been clients intending to take a loan, saving to reach their cash security deposit value. This was much more likely in Uganda, where mechanisms for rural group loan clients to make voluntary savings are more cumbersome than in urban areas of Ghana, where savings collectors (Susu agents) provide doorstep deposit services, a part of Ghanaian financial tradition that migrated successfully into some modern financial institutions like OISL. In both countries, however, Opportunity partners are historically more focused on loans, and seek to raise awareness among clients of the opportunities and benefits of saving with Opportunity. Although the IVR messaging did not target all clients, for simplicity, throughout the report "clients" refer to those clients targeted with IVR messaging unless otherwise noted.

Table 4: OISL's IVR Target Client Segments, Ghana

Segment	Description	# client accounts
Active savers with low balance	Account activity within last 3 months, balance below GHC100	10,668

⁶ Savings with no prior transactions for longer than 18 months were not targeted due to evidence from research that these clients are not reachable.

⁷ "Elite" clients with loans larger than 9 million Uganda Shillings, client with savings account balances over 100,000, and inactive clients (with no transactions for over one year) were not included.



Less active savers	Previous account activity between 3 & 9 months ago	15,604
Inactive savers	Previous account activity between 9 & 18 months ago	20,399
	TOTAL	46,671 (60% women)

Table 5: OBUL's IVR Target Client Segments, Uganda

Segment	Specifications	Number of Clients (8,009)	Behavior Objectives (KPI)
Borrowers in Arrears	<ul style="list-style-type: none"> Loan (group or individual) In arrears < 5 days 	539	<ul style="list-style-type: none"> Bring payment up to date
Borrowers in Good Standing	<ul style="list-style-type: none"> Loan (group or individual) In arrears < 5 days good standing OSA balance < 20,000 Shillings 	3,963	<ul style="list-style-type: none"> Maintain good standing* Borrow again* Increase savings balance
Savers	<ul style="list-style-type: none"> Low balance < 20,000 Active < 12 months 	3,507	<ul style="list-style-type: none"> Increase savings balance
Total		8,009 (38% women)	

6.2 Client engagement rates were high, especially in rural Uganda

In both Ghana and Uganda, the vast majority of clients listened to at least one message: 88% in Uganda and 78% in Ghana. In Uganda, 81% listened to at least four messages and the majority—58%—listened to at least ten messages. In Ghana 60% listened to at least four messages, and 23% listened to at least ten. On average, 52% of clients in Uganda answered any given call, and 48% listened. On average, 42% of clients in Ghana answered any given call and 25% listened. In Uganda, rural clients listened to—on average—ten calls, and the average was around seven calls in Ghana. These engagement rates were higher than Opportunity anticipated and were higher in rural Uganda than in Ghana overall. In Ghana, 22% of clients never picked up the call, which may be interpreted as the number not be in operation; in Uganda, the figure was 12%. Thus, the differences in the initial response rate—listening to one call—may be related simply to the portion of clients with working phone numbers. However, the portion listening to ten calls and the average listening rates were higher in Uganda. Also, the average number of calls listened to in Uganda was higher in Uganda (10.4) than in Ghana (5.7).



What does “engage” mean in IVR?

There are a surprising number of responses that can be logged in IVR, from phone numbers not going through to clients hanging up at the start or mid-way through a message, and clients who listened through the entire message. Opportunity counted a customer as “engaged” if they “listened.”

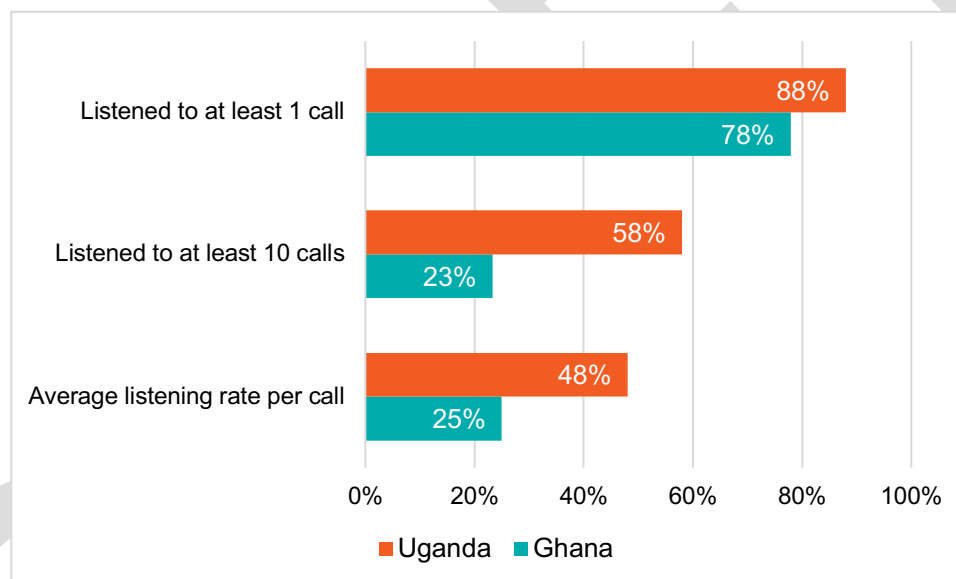
Listened, Ghana: Listened to at least 20 seconds of a message.*

Listened, Uganda: Listened to at least 20% of a message.

Opportunity did not focus on whether a customer had listened all the way to the end, because all messages include instructions at the end that are the same for all calls, so callers often hang up before the recording is over, having heard the actual message content.

*Messages ranged from 15 seconds to just over one minute in length.

Figure 3 Customer Listening Rates, Ghana and Uganda (Rural)



6.3 A gender gap of 4-6%, lower than other digital engagement strategies

On average, 4 percentage points fewer women than men listened to messages in Uganda and 5 percentage points fewer in Ghana.⁸ These are positive results—particularly when compared with other digital engagement strategies employed by these partners. The gender gap in mobile money usage is 11% in Uganda and 17% in Ghana. The gender gap in client engagement was moderate in rural Uganda in Ghana nationally, across multiple indicators: the portion of clients listening to at least one call, those listening to at least ten calls, the average listening rate per call, and the average number of calls listened to. In Ghana, the portion of women who never picked up was higher (25%) than the portion of men (18%). (See Table 6.) Ensuring that clients have working numbers prior to IVR engagement would further reduce the gender gap.

⁸ Source: http://finclusion.org/data_finder/



Table 6: Client Engagement by Gender, Uganda (Rural) and Ghana (National)

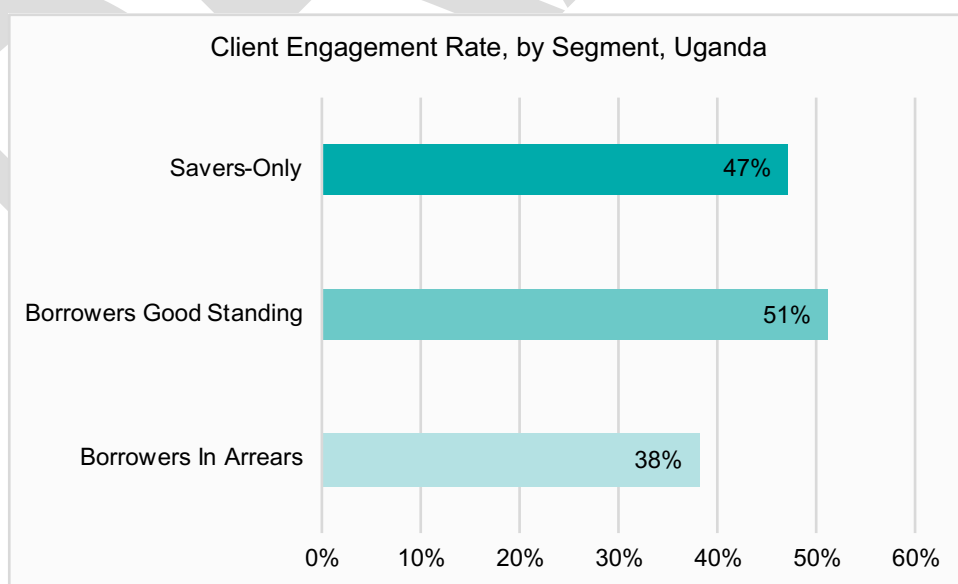
Uganda - Rural	All	Men	Women	Gender Gap
Listened to at least 1 call	88%	89%	85%	4%
Listening to at least 10 calls	58%	60%	54%	6%
Average listening rate/call	48%	50%	45%	5%
Average number of calls listened to	10.4	10.8	9.7	10%

Ghana - National	All	Men	Women	Gender Gap
Listened to at least 1 call	78%	82%	75%	6%
Listening to at least 10 calls	23%	26%	21%	5%
Average listening rate/call	25%	27%	23%	4%
Average number of calls listened to	5.7	6.1	5.3	13%

6.4 Borrowers in arrears engaged less with IVR

In Uganda, borrowers in arrears engaged less than borrowers in good standing and non-borrowing clients (savers only). (See Figure 4.) Still, on average 38% of borrowers in arrears listened to any given message. There was not much difference in engagement rates between savers and borrowers in good standing in Uganda.

Figure 1 Client Engagement Rate by Segment, Uganda

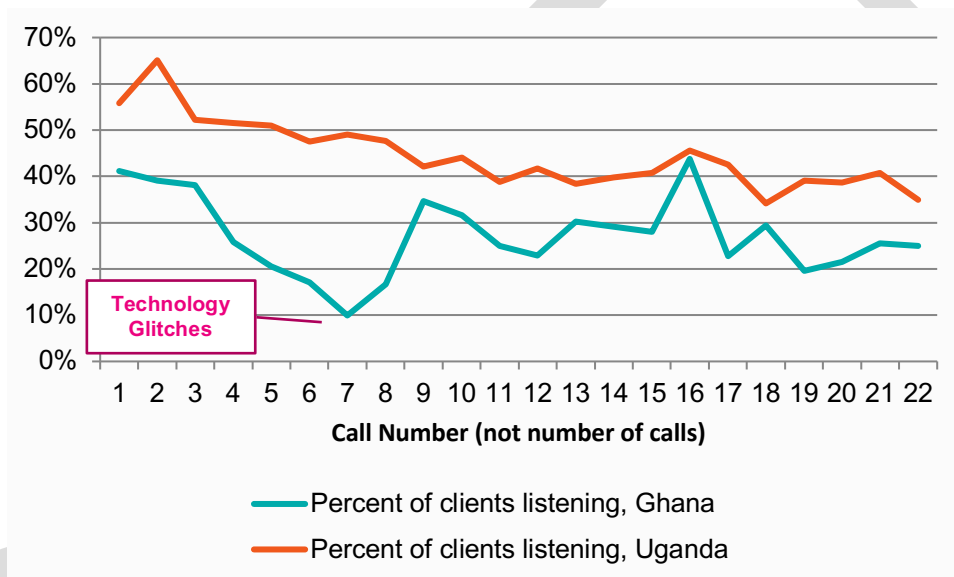




6.5 Over time, engagement rates decreased and leveled out

In both Ghana and Uganda, engagement rates declined over time, but they appeared to level off. As illustrated in Figure 5, in Ghana the initial engagement rate was 40%, yet it seemed to drop down to 10% by the seventh call—but this turned out to be a technology glitch. The listening rate then bounced back to 30% and fluctuated, landing at around 25%. In Uganda, the highest engagement rate for any single call was 60% for the second call, which declined to 40% by the 10th call, then declined more gradually to 35% for the final call. This “leveling out” indicates a sustained interest in the IVR messages among a reasonable percentage of customers. One strategy Opportunity is considering, thought, is to deliver IVR in “campaigns” with accompanying promotion through staff and posters in branches, to sustain and trigger renewed customer interest.

Figure 2 Listening Rates over time, Ghana and Uganda





7 How Did Clients Respond?

Opportunity learned through client surveys and focus group discussions that the benefits of IVR in terms of positive customer relations were as important as the benefits from improved financial behavior. Qualitatively, clients felt prompted, informed, energized, cared for, and impressed by IVR messaging. Based on staff reports and feedback from non-engaged clients, there was little negative fallout from the calls. Clients who preferred not to listen didn't pick up or opted out. Staff reflected the potential of IVR to reach more clients, strengthen client relationships, help staff train clients, prompt account reactivation, and assist staff with tasks such as client outreach, sales, loan monitoring, and loan recovery. Clients and staff saw the messaging as consistent with partner branding and particularly relevant of reaching low-literate individuals.

It was too early in the IVR innovation process to expect clear behavior results—given that partners are still learning which messages clients prefer to hear—but Opportunity analyzed client behavior to understand early results and to test quantitative indicators for their relevance. Data on the effectiveness of IVR in stimulating positive client behavior change was mixed, but promising enough to merit additional investment. On the one hand, data from Ghana comparing savings behavior before and after IVR messaging indicates that external factors swing deposits much more significantly than IVR. Similarly, in Uganda, there was no difference in positive client behavior between branches receiving messages and branches not receiving the messages. On the other hand, there was a positive correlation in both countries between positive client financial behavior and the number of messages clients listened to. Because causality can flow in either direction, a correlation is not definitive, but the trend analysis in Ghana indicated a positive influence of IVR on savings account balances. In combination with the high engagement rates and positive qualitative data, it can be concluded that IVR held some sway over client financial behavior and has potential to be more influential with improvements to message delivery.

7.1 Qualitative client and staff responses

Client and staff engagement were crucial for IVR message design, understanding client responses, making adjustments, and gaining insight into potential for future applications. Opportunity objectives focused on the end results of clients gaining knowledge and changing behavior, and key intermediate steps in that process are to strengthen the positive relationship between clients and their financial institution, to inform clients of the opportunities, features, and benefits of savings and positive loan behavior, and to motivate and prompt them to action. Clients and staff reflected the contribution of IVR to these intermediate steps and staff viewed the tool as augmenting their work, making it more efficient. (See Figures 6 and 7.) Staff and clients reflected that the messaging is particularly appropriate for less literate clients, which was the intention.



These positive comments generated support for continuing the messaging while adjusting the intervention to focus on positive aspects and on additional uses. For example, Opportunity messaging will continue to do the following:

- Be made available in a variety of languages, with variety in the topics and styles
- Include positive comments and wording expressing how important and valuable customers are, to make them feel welcome, and to know their rights as customers
- Inform and educate clients about financial topics generally and to market Opportunity products and services
- Energize clients and prompt them with specific action.

Additional strategies being considered for future Opportunity messaging campaigns include messages that address or respond to the following:

- Current topics or events
- Specific times of year (e.g., when school fees are due, holidays, agricultural seasons)
- Marketing or financial education campaigns
- Specific client challenges identified by staff
- Alerts to staff when messages will be sent to clients

Staff may opt to also receive the messages so that they are fully aware of information their clients are receiving. Additionally, messaging campaigns will be announced ahead of time with reminders (i.e., posters) in the office.

Figure 3 Positive Feedback from Client Interviews

41	Clients felt...	Prompted	• "It was a wake up call and a reminder. I like it."
		Informed	• "It teaches us to watch over our lives and to be alert. It offered advice on money management and savings for the future." • "We thank Opportunity Bank for always training us in financial literacy."
		Energized	• "I feel excited about your bank...I have been energized by your efforts to save more." • "I was inspired to continue working with you."
		Cared for	• "I realized that you think about your customers and that really touched my heart." • "I feel loved by Opportunity. If you love, you communicate." • "I realized that I work with a bank that cares about my future. They really want to help me."
		Impressed	• "<After receiving the messages> I was impressed that a savings and loans institution could offer a better service than Barclays." • "Opportunity does good because when am talking to my friends from other banks they don't receive calls from their banks, so it is something good."
		Messages consistent with brand	• "Wenchi branch has always served me well. I felt it was part of their usual care for my financial wellbeing."
		Messages relevant for low-literate individuals	• "Voice messages are better than the written messages because many people cannot read."



Figure 4 Positive Feedback from Staff Interviews



40

The IVR pilot tests received constructive feedback related to message content or style, the level of engagement with branch staff around the initiative, and the technology used for delivering messages. Negative feedback regarding message content or style will be easily mitigated in future programmatic adaptations. For example, some clients commented that the messages became monotonous, which translates to a recommendation for greater variation in messaging content. Other comments reflected the low level of engagement with branch staff about the messaging initiative. For example, some clients thought the messages could be fraudulent. In other instances, some staff were caught off guard when clients followed up with them, as prompted by the messages. This finding translates into a recommendation for engagement with branch staff in advance of and during messaging. There were also some complaints regarding the technology used for delivering the messages. Glitches at various stages of call delivery included:

- Obtaining up-to-date data on client transactions,
- Programming the calls to be sent,
- Network challenges, and
- How to proceed if message delivery was delayed.

These glitches caused inconveniences for clients and for Opportunity in interpreting customer responses. Repeat messaging and one instance of a late-night call resulted, despite Opportunity's instructions to avoid these practices. Moving forward, Opportunity and partners can make adjustments based on known technical limitations and prepare to make additional adjustments as needed. For example, Opportunity can start with a



smaller group of participants and simpler messages, then scale and increase the complexity of message design over time. There were fewer technological challenges in Uganda, potentially because there were fewer numbers to be called (8,000 compared to 46,000) and potentially due to simpler messaging, in which only 4-6 messages went out to different segments in one batch and no customer surveys were conducted. Finally, if messaging is accompanied by deeper staff engagement and promotion, customers may be encouraged to try again in case of some challenges.

Table 7: Summary of Client and Staff Feedback, Ghana and Uganda

Positive	Negative
<ul style="list-style-type: none">• Messages gave clients assurance that Opportunity still exists, that we are not like other financial institutions• Messages gave clients a feeling of belonging• Messages made clients feel valued, that Opportunity cares and is thinking about them• Messages informed clients of Opportunity's products and institution (helped cross-sell products and build trust)• Messages served as a reminder for clients to save or repay their loan• Messages prompted clients to come ask questions and get additional information• Messages prompted inactive clients to come to the branch, triggering account reactivation.• Messages saved staff time by giving clients basic information which we could build on• Messages helped reach difficult-to-reach clients and prompted them to come to us	<ul style="list-style-type: none">• Too many repeat messages• Messages were not always understood by some clients who needed slower messages or who misinterpreted the messages as being an announcement for a loan approval• Messages didn't always come in the right language or at a preferred time• Some messages regarding account status were not up-to-date at the time the messages were received• Messages became monotonous• Some clients thought the calls might be advertising or from a fraudster• Messages were viewed as a nuisance by some SME clients and other clients who could read• Some clients feared that the messages could be used as a threatening tool and show that the bank is aware of a client's negative status• At times, network interruptions disrupted the flow of the messages• Some staff were unequipped to address clients' questions and comments about the project

Sources: Phone interviews and focus group discussions with a total of 449 clients and staff.

7.2 Quantitative analysis of client behavior change: financial institution transactions

A key objective of this study was to stimulate increased savings and positive loan repayment and to reengage less active clients. Thus, Opportunity conducted analysis of client financial behavior change by examining their transactions with partner financial institutions. Although substantial analysis was conducted, the purpose of the analysis was as much to determine what type of analysis would be helpful in assessing the business case as it was to actually measure results. Findings on the effectiveness of IVR in stimulating positive client behavior change were mixed but promising enough to merit additional investment. Expectations for significant behavior change should be tempered by the early stage of the innovation. There is a learning curve in developing and delivering effective messages and an unknown timeframe for clients responding to these messages with measurable changes to their financial accounts.



7.2.1 Clients targeted with IVR exhibited positive behavior, although not necessarily due to IVR

In Ghana and Uganda, clients targeted with IVR exhibited positive behavior, although this was not necessarily related to the IVR messaging. In Ghana, the behavior change objective was to increase the value of savings account balances. Around 17% of targeted clients increased their savings balances (22% of those with working numbers). On average, clients listening to IVR increased their savings account balances by twice as much as non-listeners. Among all three segments of savers, customers increased the total value of savings accounts during the period. (See Table 8.)

In Uganda, the behavior change objectives were more nuanced. For savers and borrowers in good standing, positive behavior meant increased savings balances. Although it was also hoped that good borrowers would remain up to date on their payments and, in some cases, take an additional loan, this was more challenging to measure as an expected behavior *change*. For borrowers in arrears, (a small set of clients compared to the other groups) it meant bringing loan payments up to date. Overall, 25% of targeted clients in Uganda exhibited positive behavior change. This behavior counted the 13% of low-balance savers without loans who increased savings balances, 29% of borrowers in good standing who increased savings balances, and 70% of borrowers in arrears who brought their payments up to date. In addition, 75% of borrowers in good standing remained in good standing (25% fell behind) and 60% took a new loan. (See Table 9.)

Tracking client behavior change without comparative or trend analysis is of limited value, but comparable to most analyses of financial education and marketing initiatives. Gathering data on client behavior change, and changes in account balances is of limited value because it doesn't address the question of whether the changes occurred because of IVR messaging. To understand the influence and value of IVR, this data needs to be more deeply analyzed to reveal what might have happened without IVR messaging. This type of research goes beyond what is typically conducted on comparable financial education or marketing work.



Table 8: Clients with Good Behavior by Segment, Ghana (National)

Definition	Number of client accounts	Starting balance (GHS)	Ending balance (GHS)	Percent of clients who listened to 1 or more calls
Active savers with low balance	10,668	202,506 (41,939 USD)	1,553,368 (321,703 USD)	82%
Less active savers	15,604	3,580,218 (741,463 USD)	4,374,175 (905,892 USD)	80%
Inactive savers	20,399	2,208,304 (457,340 USD)	2,706,530 (560,522 USD)	75%
Total	46,671 (60% Women)	5,991,028	8,634,073	78%

Table 9: Clients with Good Behavior by Segment, Uganda (Rural)

Definition	Number of clients	Behavior objectives (KPI)	Percent of clients who listened to 1 or more calls	Percentage of clients with good behavior
Borrowers in Arrears	539	Bring payment up to date	81%	70% cleared their arrears
Borrowers in Good Standing	3,963	<ul style="list-style-type: none"> Maintain good standing* Borrow again* Increase savings balance 	88%	<ul style="list-style-type: none"> 75% remained in good standing* 60% took a new loan during the project period* 29% increased their savings balances
Savers	3,507	Increase savings balance	88%	13% increased their savings balances
Total	8,009 (38% women)		88%	25% positive behavior



7.2.2 Trend in savings account balances from Ghana indicated that IVR had valuable positive influence

Trend analysis of savings accounts indicated that IVR had a valuable, positive influence on average savings account balances. However, data from Ghana comparing savings behavior before and after IVR messaging indicated that factors other than IVR (in particular, the banking crisis in Ghana) had more significant influence over client savings behavior than IVR messaging. Despite this, IVR messaging still had a positive influence on savings behavior.

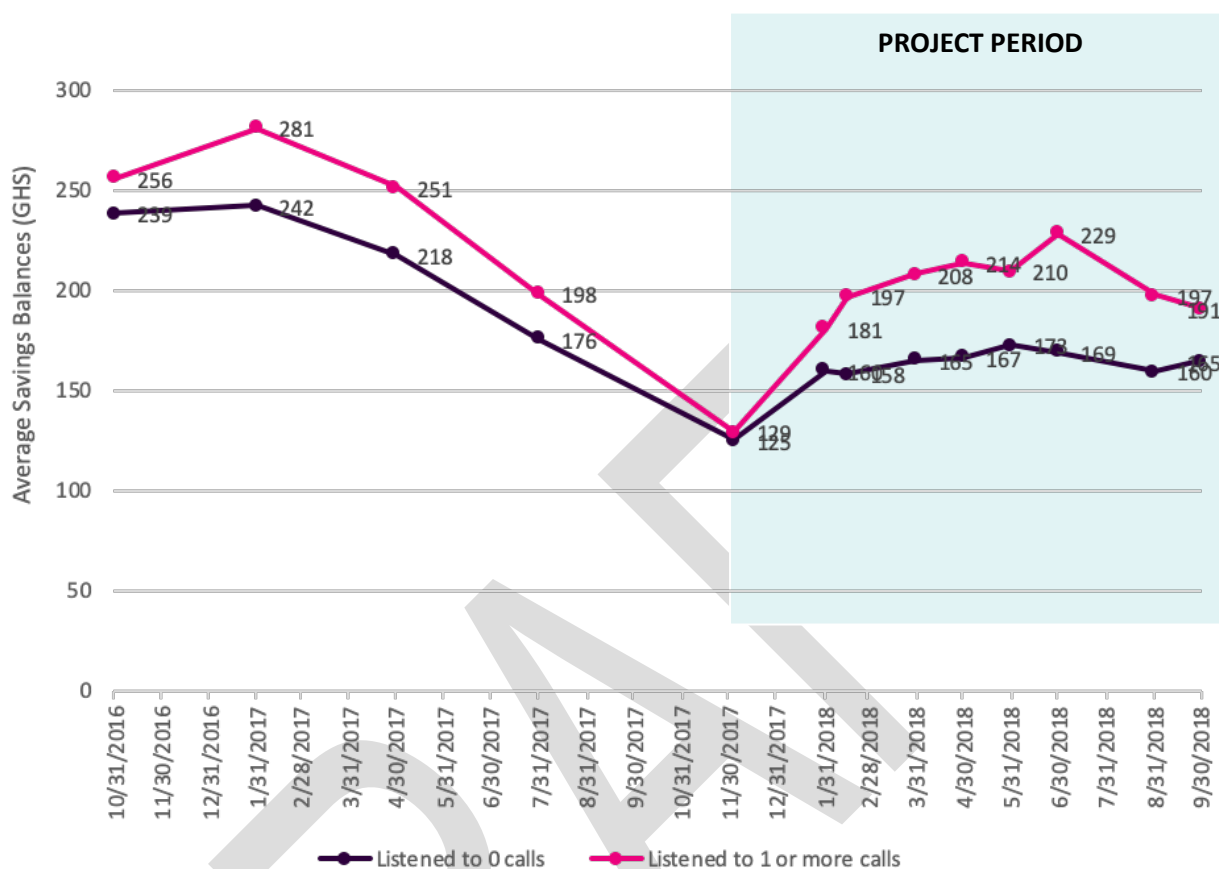
Figure 8 shows the average savings balances of clients in Ghana who listened to calls compared to clients who did not during a period prior to and during the IVR messaging. Average savings balances for both groups dropped by half between October 2016 and October 2017; given other potential factors, researchers and partners believe this negative trend was primarily related to a banking crisis in Ghana in which the Bank of Ghana closed, consolidated, or took over several large banks due to regulatory violations. During the IVR messaging period, the regulatory actions continued, but all clients began to increase their savings deposits as trust in OISL was restored, according to researchers and partners.

Trend analysis proved very useful; shows promise for making the business case

The trend analysis of the difference in average savings balances between listeners and non-listeners is a powerful tool for starting to quantify the impact of IVR on client savings behavior and the business case for IVR. Although IVR messaging encourages clients to save a little on a regular, frequent basis, a choice was made in the financial analysis to focus on the average savings balances for two reasons. First, higher balances measure client accumulation of assets, a key financial security objective for clients and Opportunity. Second, from a business perspective, financial analysis of the cost of mobilizing savings demonstrated that the more financially sustainable accounts are those with fewer transactions but higher balances. For a different purpose, analysis of transactions might be equally valuable. For example, a key goal for individual or SME financing is to help clients strengthen their digital financial footprint to establish their business track record, which in turn helps them qualify for individual business financing. This type of trend analysis can help measure the financial contribution of IVR to partner financial institutions and the monetary value of client behavior change.



Figure 8: Average Savings Balances – Comparing clients who listened to 0 calls and 1 or more calls (Ghana)



Nevertheless, IVR appears to have exerted a valuable influence on client savings behavior, as revealed by a comparison of the savings balances for listeners and non-listeners prior to and during the project. For this analysis, a “listener” was defined as a customer who listened, for 20 seconds or more, to five or more calls. These parameters were established because it is after five or more calls that behavior change started to become evident. This subset of listeners represented 55% of OISL numbers called and 68% of estimated working numbers. (24,904 customers were listeners.) The messages were delivered between December 2017 and August 2018. The change in average savings account balances for the same period the prior year were compared to the changes during the project period to ensure that seasonal variations did not impact the analysis. The year prior to the messaging, the average savings account balance of listeners and non-listeners dropped by around 50% (GHS 170 for both groups). Non-listeners reduced their balances by 52% while listeners reduced theirs by 48%, which indicates that—before messaging—stronger savers were only slightly more inclined to listen than weaker savers. During the project, listeners increased their savings balances by 56% (GHS 79) while non-listeners increased theirs by 34% (GHS 40). The savings balances of listeners increased by twice as much as the non-listeners. (See Table 10 and Figures 9-11.)



Given the significant role of other factors during the period, IVR can be said to play a mitigating role against negative external factors. The influence of the banking crisis can be seen and appears stronger than the influence of IVR. The value of the savings balances was still lower at the end of the project than it was at the beginning of the prior year, before the banking crisis for both listeners (219 compared to 356) and non-listeners (155 compared to 326). Nevertheless, IVR contributed to some clients gaining confidence in OISL and returning the care of their financial assets to formal financial institutions. (See Table 10 and Figures 10-12.)

Table 10: Comparison of Average Savings Account Balances, Ghana (GHS)

Average Balance	Non-Listeners	Listeners	Difference
End Nov 2016	326	356	30
End Aug 2017	156	186	30
Average Balance Change	-170	-170	0
Percent Balance Change	-52%	-48%	
Beg Dec 2017	115	140	25
End Aug 2018	155	219	65
Average Balance Change	40	79	39
Percent Balance Change	34%	56%	
Increase in average savings balance attributable to IVR	39		

Figure 5 Comparison of Average Savings Account Balances

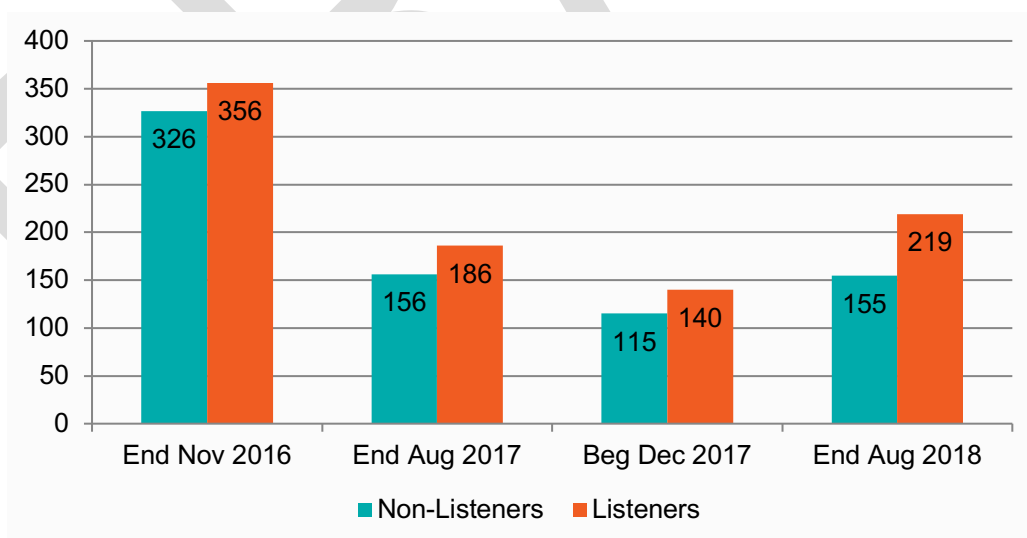




Figure 6 Comparison of Average Savings Account Balance Change (GHS)

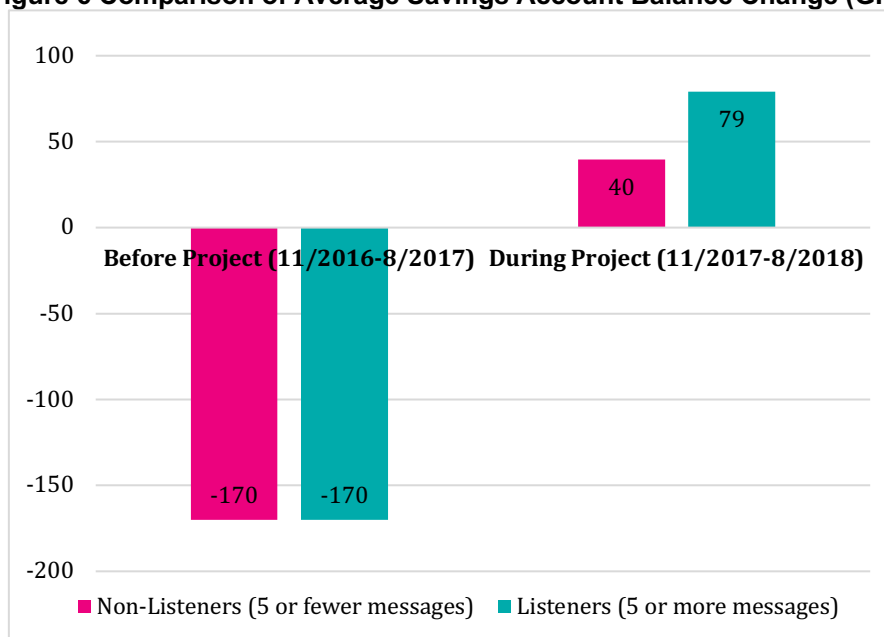
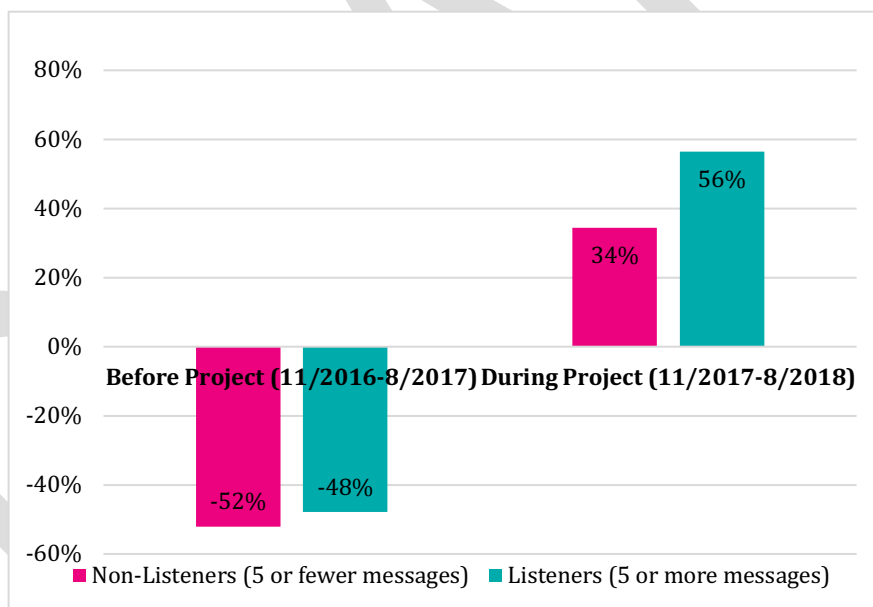


Figure 7 Comparison of Average Savings Account Balance Change (Percent Change)



7.2.3 Cost of savings mobilization with IVR appears positive

The previous section also contributed to a cost analysis of IVR, which appears positive—with the caveat that this was a pilot initiative, and the cost analysis only looks at the cost of the external service contract. The 24,409 listeners increased their savings balances by a total of GHS 981,549, which is more than they would have without IVR. Based on the cost of external contracts related to this pilot, each cedi spent on IVR generated an additional GHS 2.7 in savings. The contracted cost was more than it

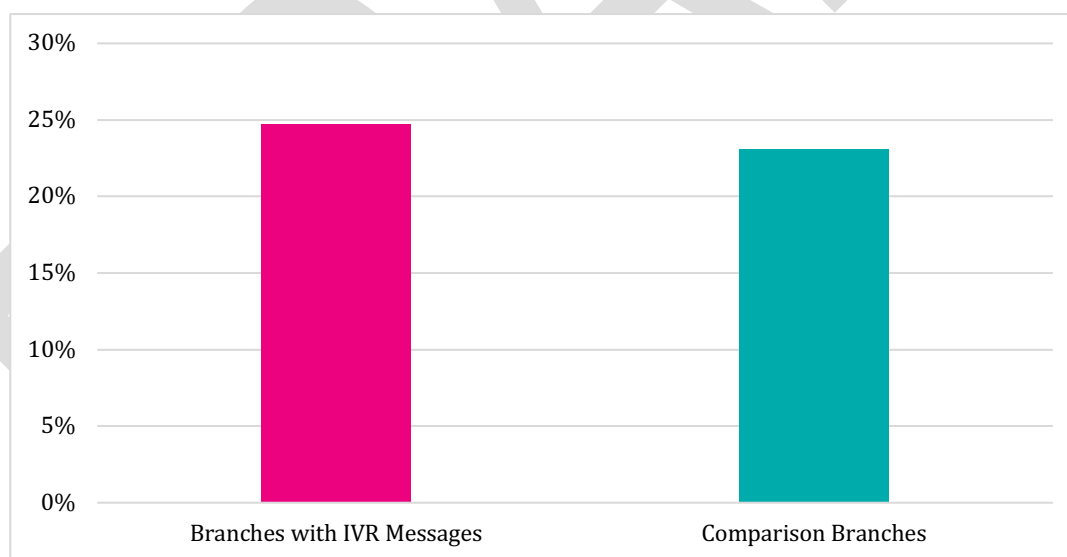


would cost to deliver IVR routinely and the analysis does not include internal staff time, so it cannot be used as a true projection of return on investment of cost:benefit. Nevertheless, these initial positive findings were sufficient to give Opportunity confidence to proceed with further investment in and testing of IVR.

7.2.4 Comparison of branch performance, Uganda: no indication of IVR influence on client behavior change

Analysis conducted in Uganda compared client behavior in rural branches receiving IVR with client behavior in rural branches not receiving IVR.⁹ While the analysis measured positive client behavior, these results showed no indication of IVR's influence on this positive behavior. For savers, positive behavior meant increased savings balances. For borrowers in good standing, the measurable positive behavior was also increased savings balances, although the messages also promoted positive repayment and repeat borrowing. For borrowers in arrears, (a small set of clients compared to the other groups) positive behavior meant bringing loan payments up to date. During the IVR period, there was no significant difference in positive client behavior change between branches receiving messages and branches not receiving the messages. This was true of all clients: male and female, and all three client segments. (See Figures 12, 13, and 14.)

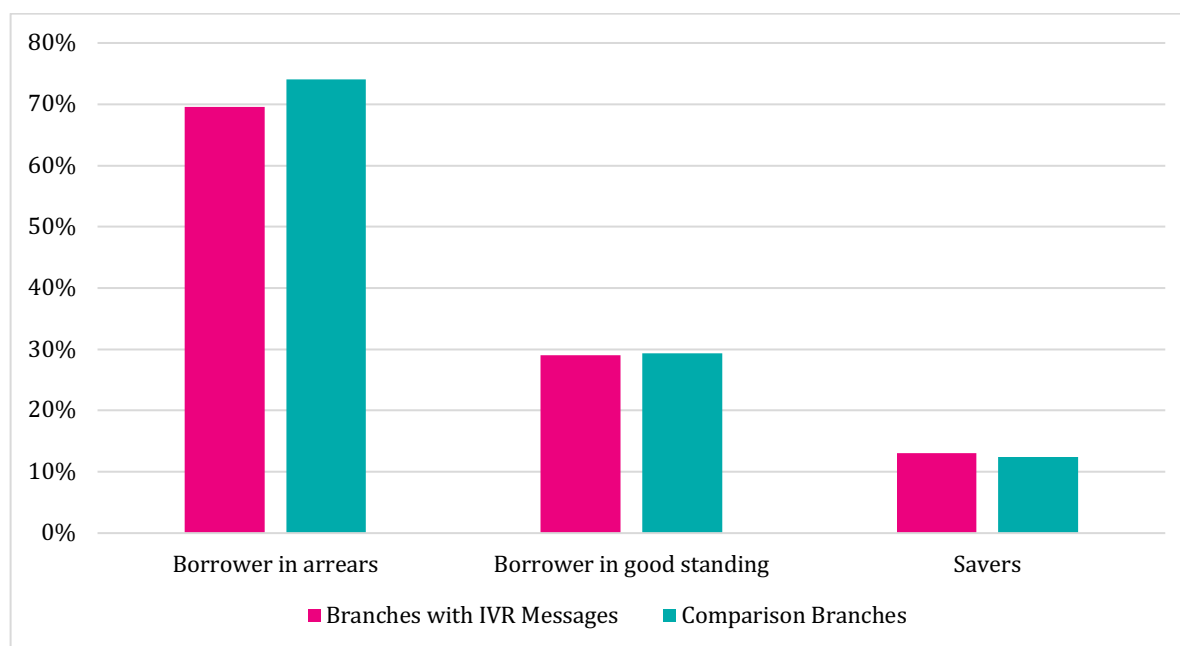
**Figure 12 Positive Client Behavior Rate, Uganda
(Branches with IVR Messages vs. Comparison Branches)**



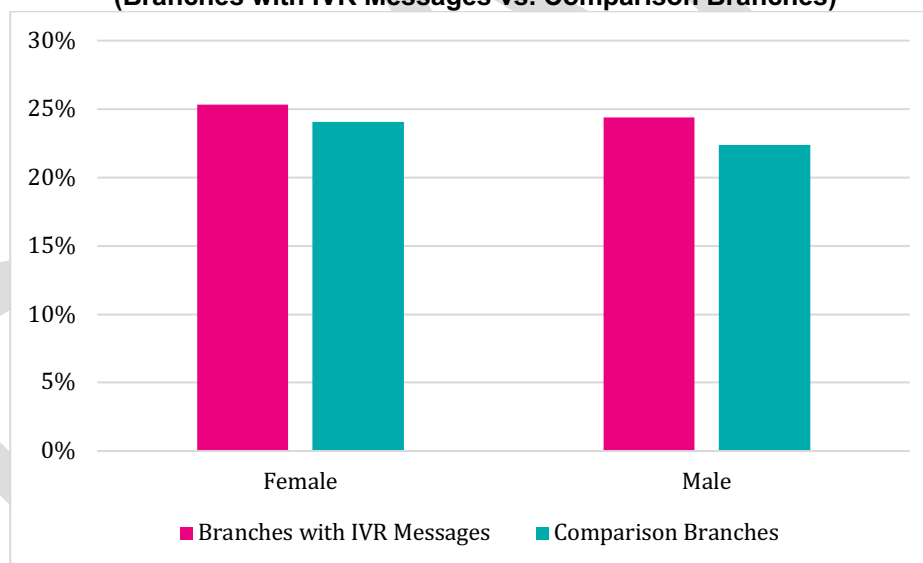
⁹ OBUL branches not receiving IVR were located in Kyenjojo, Lira, Mbale, Mukono, and Iganga.



Figure 13 Positive Client Behavior Rate by Client Segment, Uganda



**Figure 8 Positive Client Behavior Rate by Gender, Uganda
(Branches with IVR Messages vs. Comparison Branches)**



Comparative analysis on loan arrears came to similar conclusions: during the course of this pilot, IVR messaging did not influence client loan behavior sufficiently to change the loan portfolio risk. The analysis compared the loan arrears for targeted clients, who represent a subset of clients at the branch with smaller loans and/or loans in arrears. The portfolio at risk over 30 days (PAR>30) for targeted clients declined in both IVR and comparison branches and actually declined more in comparison branches. (See Figure 15.) Similarly, the portion of targeted loan clients in arrears (over 30 days and under 1 year) actually increased in IVR branches from 6% to 8%, while it declined in comparison



branches from 6% to 5%. (See Figure 16.) These findings indicate that factors other than IVR have a stronger influence. It is far from conclusive, however, given the early stage of the innovation and the small number of loan clients in arrears receiving messages (715).

Figure 15 Portfolio at Risk Greater than 30 Days, Uganda (Target vs. Comparison Branches)

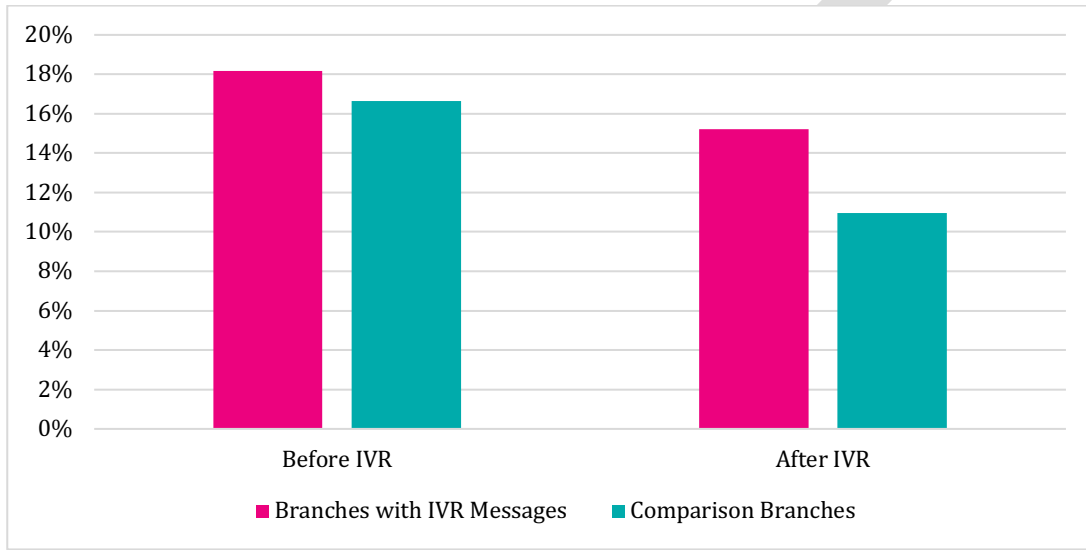
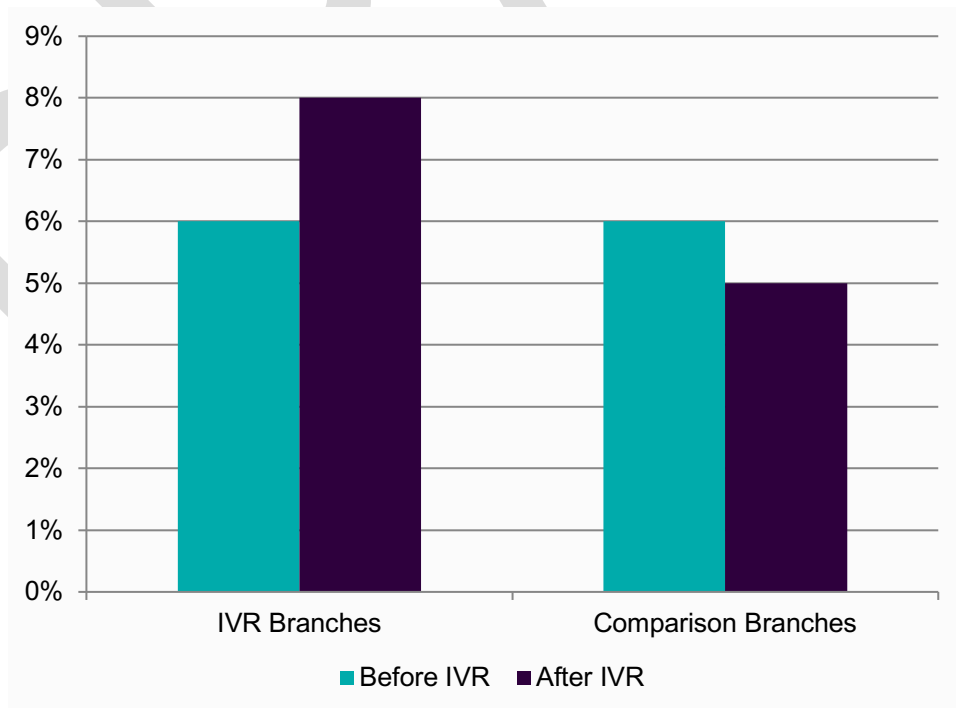


Figure 16 Targeted Loan Clients in Arrears (Over 30 days, under 1 year), Uganda (Target vs. Comparison Branches)





Comparative Analysis of Branches Proved Useful, Promising for Making the Business Case

The comparison of client behavior in similar branches shed light on the influence of IVR over client behavior. Without the comparison, client behavior appears positive in branches with IVR messages, but the comparison with non-messaged branches showed that factors un-related to IVR may have been as or more influential to client behavior.

7.2.5 Clients who increased savings account balances listened to more messages
In both countries, the data showed a link between positive client financial behavior and the number of messages clients listened to, particularly among low balance and less active savers. In Ghana, where a much larger number of savers were targeted, indications of IVR influence were strong, particularly for two segments: less active and inactive savers. Under 15% of clients (14% women) who listened to five or fewer calls increased their savings balances, but that number increased in an almost linear fashion such that 34% of client (30% women) listening to over 19 calls increased their savings balances. Clients who listened to 0 calls saved an average of GHS 19; clients who listened to 9 calls saved on average GHS 46 (GHS 5 for women); clients who listened to 18 calls saved on average GHS 82 (GHS 66 for women). (See Figures 17 and 18.) for less active and inactive client segments, there was a statistically valid, positive correlation between the number of calls clients listened to and savings balance increases of those listeners.

Figure 17: Percent of Clients with Increased Savings Balances by Number of Calls Listened to, Ghana

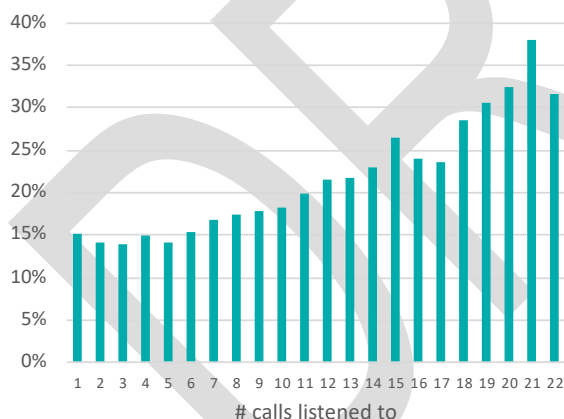
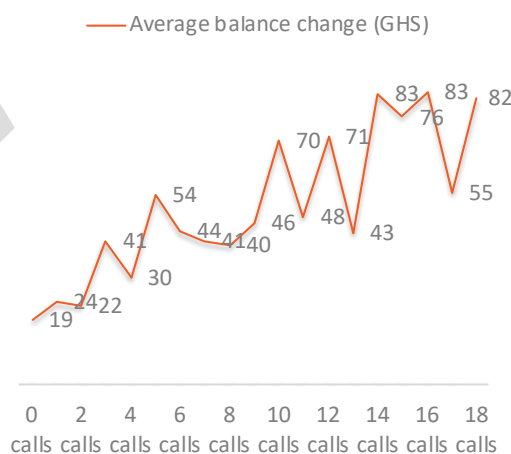


Figure 18: Average Savings Account Balance Change Based on Calls Listened To, Ghana





Similar results were found in Uganda, where there was a statistical correlation between the number of calls listened to and savings balance increases among low-balance savings without loans. In this segment, under 10% of clients listened to four or fewer calls and increased their savings balances. But clients who listened to 10 or more calls, between 10% and 25% increased their balances. Finally, 35% of the few clients who listened to every call increased their balances. Clients who did not listen to any calls saved an average of UGX 21,304; clients who listened to 9 calls saved an average UGX 53,695; and clients who listened to 17 calls saved an average of UGX 111,783. (See Figures 19 and 20.) Among clients with loans, savings account balances did not increase with the number of calls listened to. (See Figure 21) Nor did the rate of clients bringing their late loan payments up to date change with the number of calls listened to. (See Figure 22.)

Because causality can flow in either direction, a correlation is not definitive. However, in combination with the pre-IVR trend data in Ghana, the high engagement rates and positive qualitative data, it can be concluded that IVR held some sway over client financial behavior and has potential to be more influential with improvements to message delivery.

Correlation Analysis of Client Behavior and Number of Calls Listened is Insightful, if Informed by Additional Analysis

The analysis of the correlation between the number of calls clients listened to and positive behavior proved insightful, appropriately shedding light on the value of more intense exposure to IVR. While it is unrealistic to expect substantial behavior change from receiving on brief recorded message, receiving multiple messages with varied content over time can more reasonably be expected to have an impact. The challenge with using correlation analysis is that the causality can flow in either direction. As much as IVR might change client behavior, it is equally possible that clients who save more with Opportunity partners are more likely to listen to messages from the banks where they save. Evidence from other quantitative and qualitative analyses, however, support the hypothesis that IVR is influencing client savings behavior, giving weight to the value of this correlation analysis.



Figure 19: Percent of Clients with Positive Behaviors by Number of Calls Listened To, Uganda

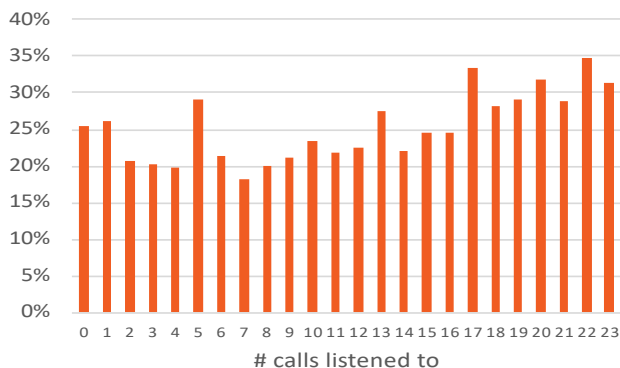


Figure 20: Percent of Low-Balance Savers with Positive Behavior by Number of Calls Listened To, Uganda

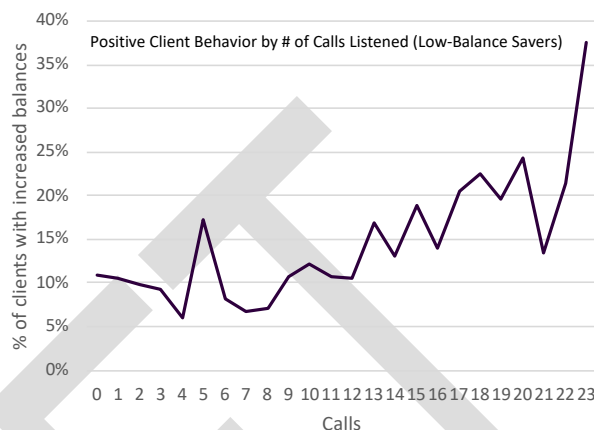


Figure 21: Percent of Good Borrowers with Positive Savings Behavior by Number of Calls Listened To, Uganda

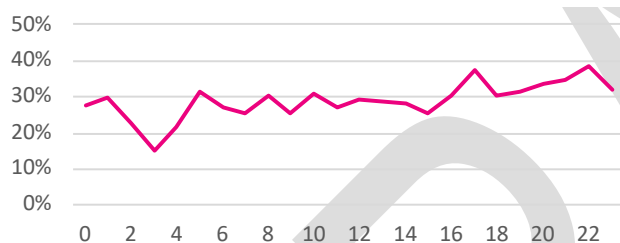
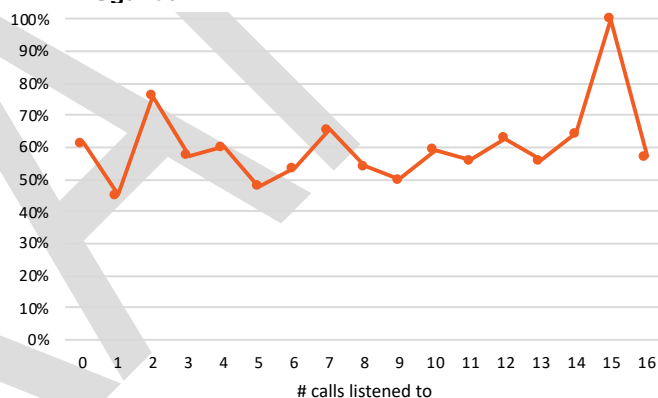


Figure 22: Percent of Borrowers in Arrears Positive Client Behaviors by Number of Calls Listened To, Uganda



8 What were Opportunity's Conclusions?

IVR messaging shows sufficient promise to merit continued testing, assessment, and scale-up. Research on pilots in Ghana and Uganda demonstrated that IVR messaging is useful for multiple purposes and client segments within the microfinance context. Based on the pilot tests in Ghana and Uganda, IVR shows promise for at least four specific use cases:

1. Relationship building
 - To make clients feel significant and valued
 - To rekindle old relationships with less active clients
 - To develop trust
 - To empower customers in their banking relationship
2. Motivation and triggers to prompt action
 - To energize clients with inspirational messages



- To encourage specific and frequent behaviors through commitment requests and reminders
- 3. Information provision and education
 - To raise awareness of and inform clients about financial products and services
 - To strengthen and reinforce client financial literacy
- 4. Information gathering:
 - To understand clients better by using call engagement and behavioral data
 - To conduct surveys

Based on the experience and research thus far, these use cases are strongly relevant for low balance savers and potentially relevant for borrowers, as well. It is still too early to quantify the business case for IVR messaging from a cost:benefit perspective. However, research conducted thus far has generated insights into the cost implications and demonstrated financial benefits to banks (e.g., increases in savings account balances) and intangible benefits (e.g., positive customer relationships and staff support).

Effective IVR involves substantial commitment from financial institutions

External experts and service providers such as Viamo were extremely valuable to this project. However, pilots of this sort should never be exclusively delegated to external service providers, as may be the tendency given the technical nature of IVR messaging. In the case of these two pilots, activities were successfully implemented because of the commitment of partnering financial institutions. Crucial moments of staff engagement included the following:

- Designing and implementing a messaging campaign that was appropriately aligned with other operational, marketing, or financial education initiatives
- Crafting fresh messages based on desired objectives for specific target segments
- Collecting regular client and staff feedback to regularly generate and analyze client response and transaction data
- Determining whether and how IVR will fit into the broader institutional strategy and the institution's level of commitment

IVR is effective reaching and engaging women and rural populations. IVR is not designed for or appropriate as a substitute to in person financial education, namely training. However, IVR does show promise as a method for delivering and reinforcing key messages and tips, for supporting deeper use of financial services, and for conducting some client research. With available data, literacy and poverty rates of clients engaged through IVR are not known, but would be worth researching, if the IVR listening rates and positive behaviour change continue to show promise.



Annex 1: References

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