

Case Study

Tigo Kilimo, Tanzania

FEBRUARY 2015

I. Introduction

Tigo Kilimo is an agricultural value added service (Agri VAS), operated by the mobile network operator Tigo. The service offers farmers in Tanzania relevant, timely and actionable information via mobile phones across three domains: agronomic practices on major crops, market price information, and weather forecasts. Content can be accessed via three mobile channels: Supplementary Service Data (USSD), Interactive Voice Response (IVR) and helpline.

Tigo received support from GSMA to develop the Tigo Kilimo service: 300,000 USD of matched grant funding and technical support for 24 months of project implementation.

PRODUCT TIMELINE

DEC 2012	APRIL 2013	JULY 2013	FEB 2014	APRIL 2014	DECEMBER 2014
Tigo Kilimo launches with USSD channel offering agronomy, weather and market price information	Tigo Kilimo launches USSD subscription packages	Tigo Kilimo reaches over 30,000 subscribers	USSD menu is made free of charge; USSD menu improved with dynamic menus	Tigo launches IVR channel and helpline	Tigo Kilimo attains almost 400,000 subscribers

PRODUCT SUMMARY DECEMBER 2014

YEAR LAUNCHED	2012
BUSINESS MODEL	Consumer pays
TARGETED DEVICE	Basic phone
PRIMARY DELIVERY TECHNOLOGY	Pull: USSD, IVR, helpline Push: SMS subscription
PRODUCTS & SERVICES	Market prices, weather forecasts, agronomy advice
MARKETS DEPLOYED IN	Tanzania
TIGO MARKET SHARE	25%
NUMBER OF SUBSCRIBERS	398,834
USERS WHO HAVE REQUESTED INFORMATION	140,759
ACTIVE USERS IN DECEMBER 2014	18,650
ARPU (USD)	0

II. Market overview

Tanzania is an emerging economy with a population of 49 million and an annual GDP growth rate of 7%. The economy is heavily dependent on agriculture—a sector that comprises 28% of national GDP, provides 85% of exports and employs 80% of the work force.[1] Yet the agricultural sector, which is comprised mostly of smallholders, has not experienced the same progress as other sectors of the economy.[2]

One of the current challenges facing rural Tanzanian smallholders is the lack of reliable agronomy, price and weather information needed to inform better farming practices and facilitate greater productivity. Existing sources of agricultural information in Tanzania, including traditional media (i.e. radio and TV) and in-person services from either a government extension officer or middleman, do not supply sufficient and timely information that farmers need to address new farming challenges related to local diseases and pests.[3]

The lack of reliable agricultural information, in addition to the rapid increase in mobile penetration, presents a market opportunity for Agri VAS in Tanzania. The unique subscriber penetration in Tanzania is at 36% in 2014[4] and is expected to rise to up to 64% by 2017. Tigo Kilimo can have a large impact in this space, providing an up-to-date, on-demand and affordable source of agricultural information to Tanzania's smallholder population outside of the traditional channels.

The launch of Tigo Kilimo has incentivized further investments in mobile agriculture space in Tanzania. Shortly after its launch, two other mobile operators have introduced their Agri VAS solutions: Z-Kilimo by Zantel (Etisalat) and Kilimo Club by Vodacom.

KEY CHALLENGES FOR TIGO KILIMO

Tigo estimated an addressable market of 6.6 million farmers growing rice, maize and horticultural crops in Tanzania and aimed to reach 550,000 famers within 18 months of launching the service. By December 2014, Tigo had reached 6% of its addressable market.

Tanzania is a country with a GDP per capita of 1,700 USD and with a majority of the population (70%) residing in unconnected, rural areas.[5] The lack of connectivity, in addition to the cost of mobile handsets and mobile services, exclude many poor rural farmers from accessing Agri VAS. Though Tigo Kilimo may offer reliable and quality agricultural information; the majority of farmers may be inclined to seek advice from alternative sources such as extension workers, friends and neighbours, which are more conventional.

1. CIA World Fact Book, Accessed 18 November 2014
2. IFAD, *Rural Poverty Portal*. Accessed 18 November 2014. Available: http://www.ruralpovertyportal.org/country/home/tags/tanzania
3. Tigo Kilimo baseline case study
4. GSMA Intelligence
5. http://data.worldbank.org/, Accessed 18 November 2014

III. Service Design

REGISTERING TO TIGO KILIMO

To access content, Tigo subscribers must first go through a compulsory free registration and profiling according to their gender, age and location. This can be done by dialing the code *148*14# on a mobile phone and selecting '1' to receive further instruction. After registration users are able to request content by navigating either the USSD menu, IVR menu or calling the helpline. Customers must have a balance of at least 1 Tsh on their account to access content.

SERVICE OFFERING

The service offers information across three domains on all available channels:

1. Agronomic tips on ten major crops: maize, rice, Irish potato, cassava, onions, banana, citrus, sweet potato, tomato and cashew

2. Market price information on the abovementioned crops for main markets

3. 1, 3 or 5 day weather forecasts available for 26 regions of the country

CHANNEL	HOW TO ACCESS CONTENT
USSD	On the USSD menu, customers can select the category of information (market price, weather or agronomy tips) and provide specific details to receive tailored content: market location and crop type for **market prices**; location and duration for **weather forecast**; crop and stage of the agri-cycle for the **agronomy advice**. The information is then sent to the customer in one or several SMS messages, depending on the message length.
PUSH SMS	Customers can also receive content by subscribing to push SMS messages.
IVR	The IVR menu offers the same content as the USSD menu in pre-recorded vocal format, including weather forecasts and market price information for selected crops. However, agronomy advice is currently only available for maize. If users cannot find the tips they are looking for, they can choose to be connected to the call centre.
CALL CENTRE	Users can access the call centre via the IVR channel. Call centre agents utilize in-house fact sheets with information on each of the crops covered by the service. Market price information and weather forecasts can also be provided upon request to the customer.

IV. Backend: Overview of systems and technology providers

Mobile network operator, Tigo, developed and launched the service in partnership with TechnoServe, a non-profit organization which focuses on helping smallholder farmers access profitable value chains. TechnoServe provided content for crop advisory tips for the USSD channel and voice scripts for IVR channel, as well as full crop fact sheets used by call centre agents. Tigo also sources regular weather feeds from Tanzanian Metrological Agency (TMA) and receives regular market price content from Nuru Infocomm.

Tigo Kilimo content is placed onto a voice platform created by VAS provider One97, or a USSD platform created by the in-house team at Tigo. All voice and text content is uploaded, published and managed by Torry Harris Business Solutions (THBS), while the call centre is managed and operated by Spanco BPO.

Tigo Kilimo has a customer relation management system (CRM), which allows Tigo to understand the uptake of the service by its wider user base and provide tailored content to customers based on users' profiles and preferences.



IMAGE COURTESY OF GSMA MOBILE FOR DEVELOPMENT

V. Business model

Tigo Kilimo have experimented with a variety of pricing models, both pay as you go and subscription based. When the service had first launched with its USSD channel, each SMS message cost 100 TZS (0.06 USD) across all content types. In April 2013, Tigo Kilimo introduced subscription packages which customers could purchase to access unlimited content for one week. These packages were available in four options: three single packages of content – agronomy, weather or market information services (each 249 TZS [0.15 USD] per week) - and a 'super' package (299 TZS [0.18 USD] per week) that gave access to all three information types.

Following the best practice from other MNO-lead services, Tigo decided to offer a free text-based service to subscribers and charge a fee to access voice channels, both of which are expensive to run and develop. Voice channels have not yet been widely marketed except to existing USSD users and do not bring significant revenues to the operator.

PRICING MODEL FOR TIGO KILIMO DECEMBER 2014

SERVICES CURRENTLY OFFERED	CHANNELS	CHARGE
• Agronomy tips • 1-5 day weather forecasts • Market prices	USSD (pull)	Free
	SMS subscription (push)	Free
	IVR (pull)	50 TZS (0.03 USD)/access
	Call Centre (pull)	6 TZS (0.004 USD)/second

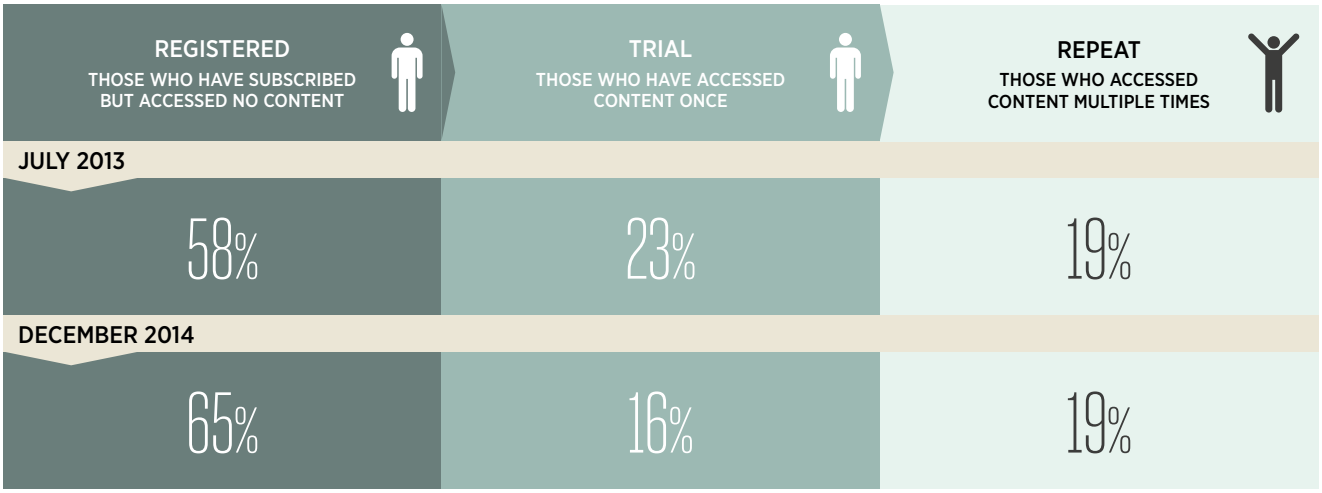
VI. Early results

WHO ARE THE EARLY ADOPTERS OF TIGO KILIMO?

- The early adopters of Tigo Kilimo, who have requested information on the service multiple times, comprised 19% of the customer base in December 2014.[6]
- Most regular users rely on **agriculture** as their main source of income (79%), owning 2-5 acres of land (42%). A significant proportion also relies on trading (15%).
- A majority of these users grow crops for domestic consumption as well as **sell their surplus** in the market (57%). 22% of these users farm only for domestic consumption, while 12% engage entirely in commercial farming.
- While most of early adopters (59%) are male, **women** comprise a substantial proportion (41%) of these users and are significantly more likely than men to become repeat users.
- A majority of these users (59%) do not have access to alternative sources of agricultural information.
- Early adopters are more likely to be **entrepreneurial**, pulling information on cash crops like onions. They are most likely to have signed up to the service to learn about new farming practices (57%) and to learn about new business opportunities through agriculture (42%).
- Among the early adopters of Tigo Kilimo, the majority of them are **young farmers** below the age of 25 (66%).

FIGURE 1

PERCENTAGE OF USERS AT EACH STAGE OF THE CUSTOMER JOURNEY



Since July 2013, the proportion of users' trialing the service has decreased, while the proportion of repeat users has remained stable. The biggest bottleneck to active use of the service is after the registration process, when users try to access content – almost two thirds of registered users do not complete this step.

6. Referred to as 'repeat users' in Tigo Kilimo's baseline report



IMAGE COURTESY OF FROG DESIGN

IMPACT AND BEHAVIOR CHANGE

- In a survey,[7] 38% of all trial and repeat users reported making at least one change in their farming/ marketing practices based on Tigo Kilimo advice.
- 88% of respondents who reported making changes based on Tigo Kilimo information also reported seeing benefits from using Tigo Kilimo information, such as better crop yields (45%), more knowledge about farming practices (37%), and greater ability to predict the weather to plan farming activities (23%).
- Surveyed users were much less inclined (<2%) to report making changes to their marketing practices (i.e. how and where to sell their produce) based on market price information provided by Tigo Kilimo. This is largely due to the service-related limitations such as content errors and/or a lack of information on local market prices.
- 66% of repeat users report to have shared the information received from Tigo Kilimo with farmers outside of their household.

TESTIMONIALS

WEATHER FORECASTS

"I decided to use Tigo Kilimo service on the weather section and they told me that there was a high probability of rain and... the same night it rained [heavily] until morning and my paddy grew. From that day and onwards, I trusted the information provided by them."

Sisemi, Mang'ula, Kilombero district

CROPS ADVISORY

"Previously I used to weed the field, remove all grasses, and take them away from the field. But through Tigo Kilimo, I obtained knowledge that I should not collect the weeds away from field but to leave them there.so, now I do as they advised me to."

Ruaha, Dumila village, Kilosa district

MARKET PRICE INFORMATION

"Through Tigo Kilimo, I can check the price of the crops in every market and I can make decisions about where to sell my crops. I might decide to sell in Dar es Salaam market or any other markets that I would choose to take my crops to."

Suleyman, Damila village, Kilosa district

7. Tigo Kilimo midline survey, May 2014

BARRIERS TO UPTAKE

- **Unsatisfactory or irrelevant content:** In a survey, participants responded that they have not used Tigo Kilimo information on their farm because the advice was irrelevant to their situation (35%) and not what they were looking for (15.5%). Users desire more frequent market information, which include prices for a greater variety of crops and markets, and more locally accurate weather information including longer-term seasonal forecasts.

- **Advice difficult to follow or too complex:** 38% of surveyed Tigo Kilimo users said they did not make any changes because information provided was difficult to understand. User testing also revealed that users felt they didn't have enough knowledge about the advice received to put into practice. Tigo Kilimo should eliminate terminology that may be considered too scientific, like 'phosphorus' and 'hydrogen' which can turn users away from the advice provided.

- **Service design:** Tigo has made changes to the USSD channel to improve navigation and reduce the number of time-outs. However, the recently introduced IVR and helpline channels still require significant improvements. The IVR menu is plagued by service side issues: less than 10% of requested content is delivered, and over half of failed deliveries are due to service side issues. Tigo Kilimo's helpline is also struggling to keep up with the demand for information due to its low capacity. It answered only 15% of calls since launch, 20% of which were 'silent customers' – perhaps due to network issues.

- **User capability:** Illiteracy and low technical literacy is a major barrier to uptake, as the USSD channel requires users to navigate through the menu interface and comprehend text-based information. Illiterate or low literate users may be reluctant to sign up to the service if they cannot use the USSD menu, or if the IVR and helpline channels are not accessible.

- **Insufficient marketing:** Due to a lack of streamlined marketing efforts, many of Tigo Kilimo's target customers have not yet been reached. Further, users who have heard of the service and/or already registered may not be aware of how to use the service. Channels outside the USSD channel are poorly accessed due to lack of users' understanding of available functionality and content; only 1 in 20 interviewed Tigo Kilimo users was aware of the helpline.

VII. Marketing, Distribution & Pricing

Tigo's primary marketing strategy relies on below the line marketing (BTL), mainly blast SMS campaigns and USSD-attach. While this strategy has attracted a large majority of registrations from its current customer base,[8] this method cannot reach beyond Tigo's current customers to serve as an acquisition tool. An SMS consisting of 160 characters has its limitations in conveying the value of Tigo Kilimo. Many SMS recipients were unclear on how to sign up, how charges were accrued, how to use the service or even that the information from the service could lead to benefits on the farm. Tigo Kilimo was also occasionally marketed at large farming events and during roadshows alongside other Tigo products.

By diversifying the marketing strategy to include face-to-face marketing, media campaigns and promotional flyers, Tigo can better convey the value of its service and attract a greater numbers of users. A complementary training service or face-to-face promotion can support users' awareness of how to use the service, and increase likelihood of effective use. Users who learned about the service through other farmers or sales agents during face-to-face promotions were much more likely to return to the service.



IMAGE COURTESY OF GSMA MOBILE FOR DEVELOPMENT

8. According to a recent phone survey, a vast majority (94%) of users say they learned about Tigo Kilimo from a promotional SMS.

VIII. Looking ahead

Though acquisition rates remained slow for the first 12 months of service operation, Tigo Kilimo has made large strides since its launch in 2012. Understanding the constraints to service uptake, Tigo has improved the USSD menu, its most popular channel, to incorporate more accurate and up-to-date menu options based on the availability of dynamic content (weather forecasts and market prices).[9] This has improved the successful delivery rate of SMS messages to over 90%. At the same time, the USSD service was offered to all Tigo users free of charge in February 2014, resulting in a rapid increase in customers and peaking with 100,000 new registrations in April 2014.

However, the recently introduced IVR and helpline channels still require significant improvements. Tigo Kilimo could address the service-related issues on voice-based channels by simplifying the navigation menu and increase the capacity of its helpline in order to enable easy access to content and to better demonstrate its overall value to users. With such improvements and more targeted marketing efforts, Tigo can maintain a more sustainable revenue stream and better serve a wider number of illiterate and information-deprived smallholder farmers.

9. Prior to this change, the menus had included a number of content options even if the information was unavailable.

The GSMA represents the interests of mobile operators worldwide, uniting nearly 800 operators with more than 250 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and Internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces industry-leading events such as Mobile World Congress, Mobile World Congress Shanghai and the Mobile 360 Series conferences.

For more information, please visit the GSMA corporate website at www.gsma.com. Follow the GSMA on Twitter: @GSMA.

Mobile for Development

Mobile for Development brings together our mobile operator members, the wider mobile industry and the development community to drive commercial mobile services for underserved people in emerging markets. We identify opportunities for social, economic impact and stimulate the development of scalable, life-enhancing mobile services.

mAgri

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