{DATA HACK 4FI}

# INNOVATION AWARD

*Advancing financial inclusion through data innovation*

## Season 3

An initiative of

insight2impact

# Table of contents

# DataHack4FI

DataHack4FI is an innovation competition that brings together data enthusiasts and emerging technology companies to promote the use of data-driven decision-making in financial and economic inclusion.

Find out more about the competition at datahack4fi.org.

1

# Message from insight2impact

**Hennie Bester** | Programme Lead

It's tremendously exciting to be at the end of a third season of the DataHack for Financial Inclusion (DataHack4FI) Innovation Competition. We've seen the competition evolve from a hackathon to a Pan-African initiative that spans seven countries and through which entrepreneurs from emerging tech companies are motivated to collaborate with data enthusiasts.

One development we've witnessed over the last three years is the growing international interest in start-ups from Africa, particularly those working on digital solutions. Several big tech companies have launched digital skills training or entrepreneurship initiatives, and some local fintechs have succeeded in attracting investment from Silicon Valley-based venture capitalists.

What's unique about DataHack4FI is that teams are challenged to extract value from data and digital technology in a way that potentially contributes to greater financial or economic inclusion for Africans. We believe that this triple focus on digital technology, data and inclusion can result in products that are more aligned with consumers' needs and therefore more likely to be viable. Fourteen (14) of the most promising solutions from Season 3 are featured in this booklet.

Perfecting a competition or investor pitch is only one step in the journey, and we are grateful to the innovation hubs, data science organisations, academic institutions and the many individuals who have offered their time to spread the word about DataHack4FI or to support the participants.

One of the great joys of DataHack4FI has been uncovering the hundreds of young Africans who have an interest in data science and a commitment to learning more about it. Through a partnership between insight2impact, Microsoft and Liquid Telecom, 169 aspiring data scientists completed the Microsoft Professional Program in Data Science earlier this year.

Throughout Season 3, and via in-person meet-ups at the hubs, the formation of study groups, participation in webinars and online conversations via Facebook, WhatsApp and Slack, we have seen a glimpse of the power of a networked community of individuals and organisations committed to using data and tech for good.

# Season 3 | The journey continues

**Dumisani Dube** | DataHack4FI Lead

I am delighted to present the final leg of the DataHack4FI journey! Season 1 and Season 2 were great, but Season 3 is phenomenal. We kicked off Season 3 with a total of 48 emerging technology companies and only 14 will have the opportunity to battle it out at the grand finale. Season 3 of the Datahack4FI competition was hosted across seven African countries, namely Ghana, Kenya, Rwanda, South Africa*, Nigeria*, Uganda and Zambia.

DataHack4FI was initially designed in 2016 as a short-term engagement aimed at bringing together like-minded youth to solve specific problems by using a provided dataset. Three years later, this approach has evolved. Our partnership with Microsoft and Liquid Telecom for Season 3 resulted in a data science professional programme, tailored to identify young talent for opportunities of employment at emerging technology companies. Of the 374 professional programme enrolments, 169 youths completed the coursework (a 45% completion rate). These 169 were signed up for a final project (capstone), and upon successful completion they will be awarded the certificate in the Microsoft Professional Program in Data Science, valued at USD999.

Parallel to the professional programme, we created an opportunity for emerging technology companies with existing product(s) or services to also participate in the competition. Season 3 requirements for the emerging technology companies were to define a specific business problem and then solve the problem using data analytics.

These companies were also allocated a data enthusiast and received three months' support from several data scientists and business experts within our network of partners.

We had a total of 45 emerging technology companies, 45 paired data enthusiasts and 36 data science experts participating (228 individuals), and we have seen amazing teamwork and great solutions come out of this initiative.

For the top 14 teams, Seedstars offered an Investment Readiness Program which has been developed to boost tech start-ups looking to get ready for fundraising. This programme provides participants with access to a data-driven series of training, mentoring sessions from experts and investors, as well as curated insights.

It is certain that the future of digital services is data driven, the world continues to move away from conventional methods to be more digitally innovative and Africa is not exempt from this movement. At insight2impact we believe that the youth are responsible for championing local innovations that will address the existing challenges in financial and economic inclusion.

In conclusion, I would like to congratulate the 14 teams that will be pitching in Kigali for the grand prize of USD25,000 and extend my appreciation to everyone who participated in this season.

*Countries recently added to participate in the DataHack4FI*

# Meet the DataHack4FI team

## Dumisani Dube
### DataHack4FI Lead

Dumisani is the Head of Application Lab at insight2impact where he is responsible for leading the strategic implementation of the DataHack4FI innovation competition since its launch in 2016. He has a passion for supporting youth entrepreneurship in Africa and bringing together various stakeholders who share the same vision of empowering youth with relevant digital skills for a sustainable future.
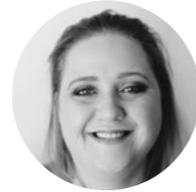
## Nicola Schoeman
### DataHack4FI East Africa Lead

Nicola manages the DataHack4FI competitions in Kenya, Rwanda and Uganda, from the planning and inception stages through to post-competition. In this capacity, her responsibilities include customising the competition to each country's context, managing activity timelines, stakeholder management and network analysis. As an experienced econometrician, her interests include exploring the dynamics of real economies and value chains in emerging economies, and in surfacing businesses that drive change in the landscape of disruptive technologies.

## Candice Borgstein
### insight2impact Communications Specialist

Candice manages communications (social media and offline comms) and provides strategic support for key events and projects within insight2impact. She has a passion for connecting people across countries involved in the DataHack4FI competition, as well as communicating the stories of the participants and winners.

## Michael dos Santos
### Data Portal Manager

Michael has been part of the team since January 2016. Since joining insight2impact, he has focused on user interactions with large datasets, the visual clues that bring insights to decision makers and digital strategies to improve financial inclusion. He also leads the development and design of digital assets for the insight2impact brand.

## Kgomotso Tolamo
### DataHack4FI West Africa Lead

Kgomotso manages the planning, coordination, logistics and roll-out of DataHack4FI Ghana and Nigeria. Her responsibilities include stakeholder relations and participant management. Her interests pertain to the role and contribution of SMEs in upward mobility of the poor and economic development in emerging markets.

## Robert Jones
### DataHack4FI Southern Africa Lead

Robert is responsible for overseeing the DataHack4FI competition in Zambia and South Africa. He is enthusiastic about driving innovation and digital skills development throughout Africa, and he has an in-depth understanding of research methods and a passion for the implementation of evidence-based research practice.

## Louise de Villiers
### insight2impact Deputy Lead

Louise played a pivotal role in designing the research component of the DataHack4FI, assisting in aligning the activities with specific research questions and learning objectives. She assisted with planning and logistics of the overall DataHack4FI innovation competition. Her research interests include different data collection techniques, using data for decision-making, and the use of alternative data to understand the gender gap in financial inclusion.

## Mari-Lise du Preez
### insight2impact Partnerships Manager

Mari-Lise seeks to understand and do the work of networks and partnerships within insight2impact. The DataHack4FI initiative gave her an opportunity to put these skills to work where she helps to convene our partners. She launched the online/offline DataHack4FI community (find us on Facebook!).

# DataHack4FI: Driving data science skills development

## in partnership with Microsoft and Liquid Telecom

With data science still emerging as a career path for young Africans, a shortage of data science human capital is a key contributor to the disconnect between the available data and the decisions being made for financial and economic inclusion in Africa. As organisations begin to recognise the power of data and the need to employ a greater level of data analytics in the design of product innovations, capable African data scientists are required to meet this demand. The DataHack4FI initiative seeks to contribute to data science skills development and the empowerment of youths in a field that is increasingly providing opportunities for career advancement.

DataHack4FI Season 3 is supporting digital skills development for African youths, and by partnering with Microsoft and Liquid Telecom, 169 aspiring data scientists from more than seven African countries are currently working towards completing the

Microsoft Professional Program (MSPP) in Data Science, on Liquid Telecom's 21C Skills Platform, an internationally accredited certification valued at USD999. The top-performing candidates from each DataHack4FI focus country have been paired with an emerging technology company to collaborate in the design of innovative solutions to financial and economic-inclusion-related business challenges.

As the data science landscape in Africa matures, where organisations and institutions are gradually realising the value of adopting evidence-based business practices, there is a clear need for capable African data scientists who understand the context in which business challenges will need to be solved. By driving data science skills development and data-driven thinking throughout Africa, the DataHack4FI innovation competition is enabling the design of African solutions to African problems.

> " The 21C Skills Platform was built for the African tech enthusiast and we couldn't have asked for a better audience than aspiring DataHack4FI participants when we launched our inaugural course. "
>
> - **Helinna Ayalew**,
> Head of Digital Education at Liquid Telecom

**374** Enrolments

**169** Completed
10+ modules

**45%** Completion

**85%** Males

**15%** Females

**100%** African youth
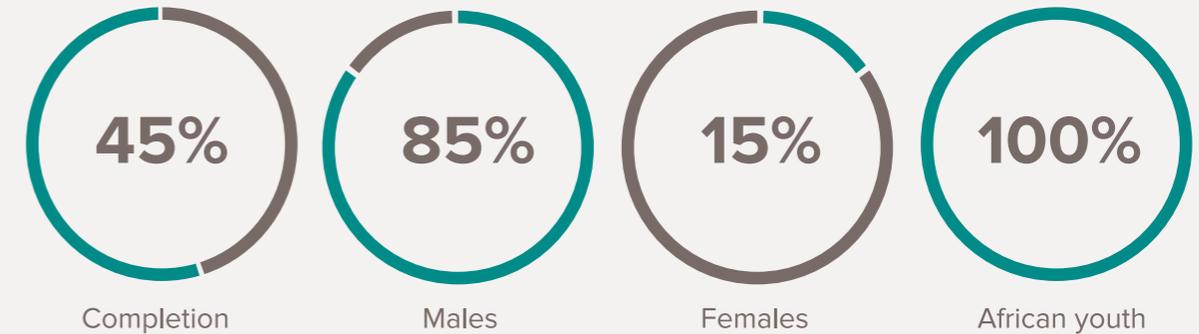
## MSPP enrolments by country

| Country | Enrolments |
|---|---|
| Nigeria | 76 |
| Ghana | 21 |
| Zambia | 17 |
| Kenya | 16 |
| Uganda | 14 |
| Rwanda | 10 |
| South Africa | 10 |
| Other | 5 |
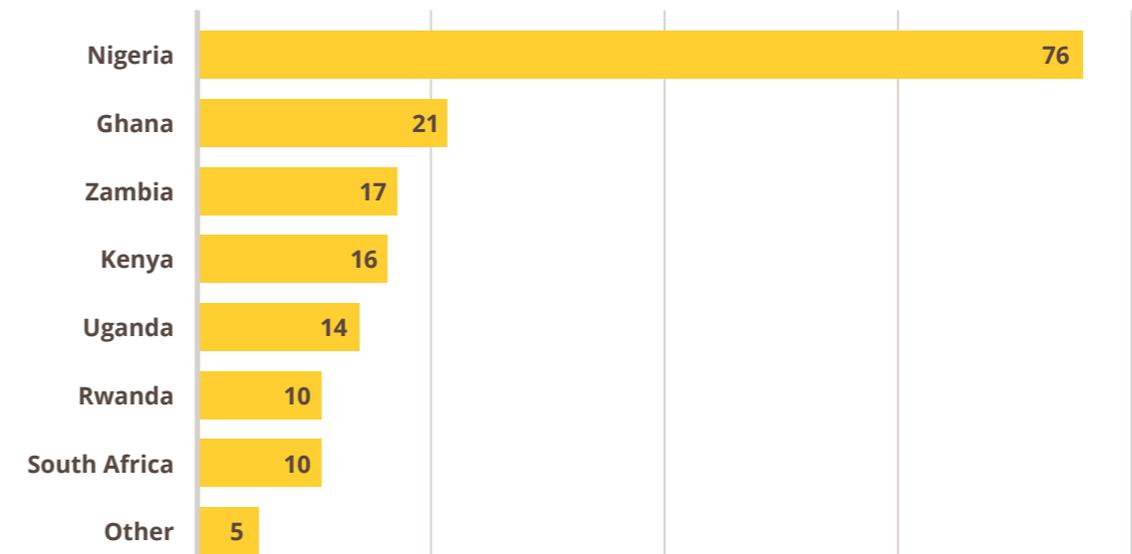
# Overview | Season 3 participants

The DataHack4FI Innovation Competition promotes the use of data analytics to solve challenges experienced by individuals or communities. The competition encourages Pan-African collaboration by creating opportunities for data enthusiasts and emerging tech companies to partner in developing solutions that address local financial and economic-inclusion-related challenges.

Building on the previous seasons of the competition, DataHack4FI Season 3 serves as a platform for each participating team to showcase the solution it develops to potential investors, partners and clients (while vying for the overall cash prize). Data enthusiasts and emerging tech companies from Ghana, Kenya, Nigeria, Rwanda, South Africa, Uganda and Zambia were encouraged to apply.

**Legend:**
- Tech team member
- Data enthusiast
- * Data expert

## 228 Participants
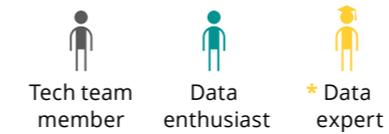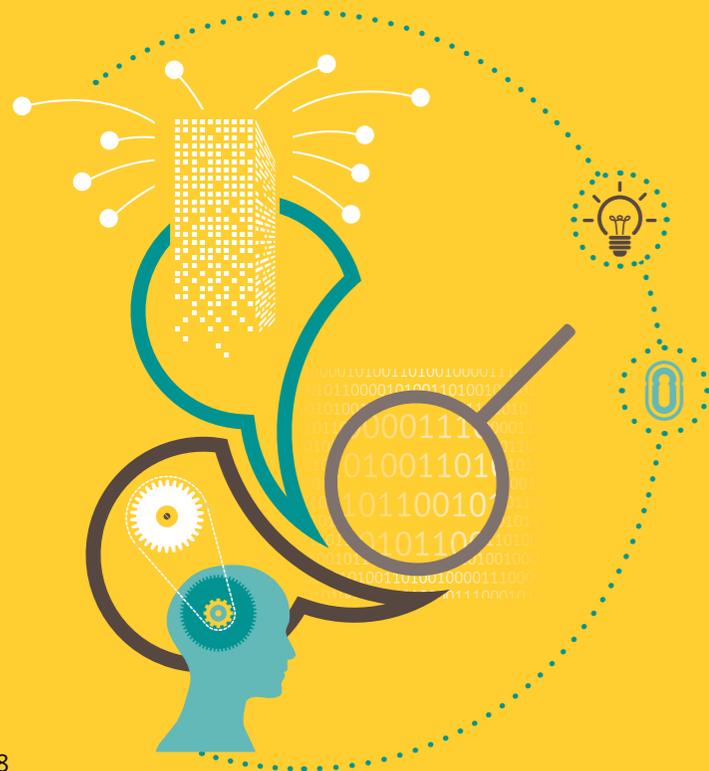
### Rwanda — 12
- Extra Technologies
- Fikia
- Jquicker

### Ghana — 27
- AgroSourcing
- Complete Farmer
- Damansah
- Fineazy
- Nvoica
- Pennysmart

### Nigeria — 42
- AG Food Tech
- Credit Bank
- Databanter
- Esusu Africa
- Gr8fingaz
- Prof International Network
- Proximate AGRO

### Uganda — 38
- Akello Banker
- At Hause
- Bureau Vente (BVL)
- Ezyfarm
- FootMo Kit
- International Airtime Top Up
- Sema

### Kenya — 37
- Biztele
- Kinda Credit
- MAMA Ventures
- Mosabi
- Ontech Systems
- Usalama Technology

### South Africa — 41
- Akiba Digital
- Botlhale AI
- CHIPS AG
- Digital Striker
- Inclusivity Solutions
- MoneyAC
- ORU
- Prim-U

### Zambia — 31
- Aretech
- Brig Africa
- Dytech
- eMsika
- IFLL
- TLGO
- Musanga

*Some experts are shared between teams*

8

9

Meet the finalists

# Fineazy | Ghana



**Monique Baars**
Company Representative

**John Bagiliko**
Data Enthusiast

**Renato Rossi**
Data Science Expert

## Problem statement:

Financial inclusion is failing in Africa. Seventy-two percent (72%) of adults are still unbanked, while financial service providers are struggling with high churn, account dormancy, default, and declining savings rates. A large gap exists between the ~ USD130 billion financial services opportunity in Africa, and the reality where 67% of adults are financially illiterate and making poor financial decisions. Access to financial products without true understanding of financial concepts is not fair to individuals or sustainable for institutions. Finance is hardly taught in schools, the available information is overly complex, and existing education tools are either manual, expensive and not measurable or have prohibitive user requirements. Fineazy is solving the problem of financial illiteracy across Africa with an education chatbot. But Fineazy only succeeds in this mission if users actually improve their understanding and progress through the learning journey by mastering financial concepts along the way. In reality, it is challenging to build trust, keep users' interest and attention, and incentivise users to engage with the content, understand the concepts, keep coming back to learn, and progress all the way to the end.

## Solution:

Fineazy is building financial capability and trust using tailor-made content. This is done with local storytelling, personalised learning journeys and an AI-powered chatbot. It is a simple yet powerful solution that is relevant and accessible to the African context and fits seamlessly into daily communication via SMS, Messenger or WhatsApp. To improve the effectiveness of Fineazy's product, we developed a dashboard during the DataHack4FI competition using the rich data we capture from each user's interactions, combined with a smart analytics engine that will allow us to optimise each user's learning journey so that we maximise their engagement, understanding, progress and confidence. Specifically, we can use the data analytics dashboard to:

- identify where content can be improved
- personalise the experience to each individual, including times of day to message
- develop insights into user behaviour and sentiment
- report each user's progress to Fineazy's customers
- measure and share impact reports with partners

Financial education is an important part of the financial inclusion ecosystem as it promotes financial activity and sustainability. Fineazy's primary customers are financial service providers who have a financial and regulatory incentive to educate their consumers. As such, the education is free for individuals and is therefore truly inclusive.

**Market segment:** Fineazy is a B2B platform which provides tailored content for a personalised learning experience. The platform is aimed at time-poor millennials. This solution benefits both individuals and institutions who value impact and measurable results in real time.

# Damansah Inc | Ghana



**Claver Nambegue Coulibaly**
Company Representative

**Solomon Igori**
Data Enthusiast

**Victor Mochengo**
Data Science Expert

## Problem statement:

In Africa, early-stage business owners aged between 20 and 44 struggle to control their finances and receive relevant insights from their business activities to grow their businesses. This problem prevents them from accessing credit, from knowing their business growth and from scaling their businesses.

## Solution:

Damansah Bookkeeping is a user-friendly bookkeeping mobile application that allows business owners to track their money coming in and out as cash, credit and mobile money, and to use the data generated to make business decisions. Running their businesses with Damansah Bookkeeping provides an opportunity to business owners to apply for a loan right through the app. We then provide partnered financial institutions with the business owner's business identity and financial data so they can be helped according to their needs. Our vision is to become the largest and most powerful bridge leading African entrepreneurs to financial inclusion.

**Market segment:** Micro and small business owners

# Usalama Tech | Kenya

**Marvin Makau**
Company Representative

**Cynthia Thinwa**
Data Enthusiast

**Timothy Oriedo**
Data Science Expert

## Problem statement:

Poor access to emergency services causes one out of three deaths in Kenya. Road traffic accidents alone account for 59.6 injuries and 28.2 deaths per 100,000 population. A survey conducted by the African Health Sciences on ambulance response found that out of a sample of 310 road traffic casualties, police and ambulance vehicles transported 6.1% and 1.4%, respectively. This shows that there is a huge gap to be filled by emergency services to bridge this gap. According to The World Bank, the implementation of an "effective, prioritised, timely emergency care can address 45% of deaths and 36% of disability in low- and middle-income countries".

## Solution:

We developed Usalama – a fully integrated, mobile-based platform that creates a system that improves the speed and accuracy of communication during emergencies. It provides a fast and efficient way to request help through government agencies, community health-workers/volunteers, ambulance service providers, private security services and other emergency responders. By utilising USSD and smartphone technologies like GPS, Usalama is able to create a more efficient utility of existing emergency resources thus lowering the overall average emergency communication cost for victims to Ksh1 (USD0.009). Therefore, by providing low-cost access to emergency services, families living in high-cost and low-cost areas are equipped to protect themselves against the risks of everyday life since emergencies are sporadic and unpredictable in nature. Having an affordable solution that caters for all people in all walks of life makes Usalama financially inclusive.

**Market segment:** Lower-middle class with a disposable income between USD150 to USD700. This is because our primary subscription product ranges from USD5 to USD10 and we use a pooling model to offer micro-cover for emergency assistance. As the odds of claims are not as high, we should be able to provide our subscribers with on-demand, professional emergency evacuation without any additional fees.

# Kinda Credit | Kenya

**Chris Ogutu**
Company Representative

**Stephen Nderitu**
Data Enthusiast

**Derrick Mwiti**
Data Science Expert

## Problem statement:

Women are not often considered when it comes to the digitisation of financial products. Women in trade, especially women in microenterprises, therefore have no access to immediate loans to improve their trade. This particular problem is being faced by women in cross-border trade and women in open markets like Gikomba, Toi and Kwangware, as well as less developed parts of the country.

## Solution:

We want to provide digital financial credit for women that will reduce the amount of time they spend applying for loans online or even with banks or creditors. We will also allow them to get fast and quick loans. The solution seeks to help women to grow their businesses as well as to have access to relevant and responsive financial services for their trading. Which reduces the risk of them losing their businesses.

**Market segment:** Women traders. We will give them micro-finance, which they can use to better their lives.

# Esusu Africa | Nigeria

**AbdulAzeez Oguntoyinbo**
Company Representative

**Yusuf Oluwatoki**
Data Enthusiast

**Oluwaseyi Whyte Akinlolu**
Data Science Expert

## Problem statement:

In Nigeria, 36.8% of the adult population are financially excluded. Most often they indulge in regular thrift collections also known as Esusu. Esusu savings involve customers physically giving a certain amount of money to the collector at the end of a month. The collector takes a fraction of the money for the services rendered. Both the Esusu collectors and the contributors are faced with the following problems of a traditional and manual savings scheme:

- too much paper work leading to loss of data
- the high risk of handling cash, resulting in robberies, fraud and other cash-related crimes
- inaccessibility to digital financial services and low access to credit
- operational inefficiency leading to wastage of time and efforts
- low financial literacy and distrust of financial services

## Solution:

Electronic Esusu is a unified finance management solution designed to automate the process of thrift savings, collection and microcredit enhancing digital financial service delivery for the unbanked and under-banked. The solution explores cloud and mobile technology to enhance transactions of the Esusu schemes. The system also provides members and management of Esusu schemes with instant information on any transaction made (SMS/email/USSD) guaranteeing the security of data and information.

Leveraging the use of big-data tools and analytics from Esusu transactions, Esusu Africa aims to advance financial inclusion to the last mile by connecting the financial service providers to the unbanked segment so as to make them bankable.

**Market segment:** The unbanked, underbanked and the banked through our agent network driven approach. We would be providing the platform to a network of cooperative societies, microfinance institutions, thrift collectors, credit unions, SACCOs, and mobile-money and bank agents to enhance the delivery of digital financial services to the last mile.

# Credit Bank | Nigeria

**Wumi George**
Company Representative

**Olayiwola Arowolo**
Data Enthusiast

**Chika Obuah**
Data Science Expert

## Problem statement:

Creating an alternative way of banking for the unbanked and the underbanked through a simpler and secure process using technology.

## Solution:

Using machine learning and data science we developed a staff-based Android app called Uncle Wumi which can be used to open accounts, withdraw cash, deposit cash and receive instant transaction notifications. Through the help of our agents and Uncle Wumi, all the financial transactions are carried out at the doorstep of our customers.

**Market segment:** The middle and lower class, which consists of the market women and men, farmer, artisans, traders, cooperatives and organisations. The customer segment is dominated by the less educated who find going to the bank and coping with its activities difficult. This segment is dominated by women who are mostly traders who need loans for their business.

# Extra Technologies | Rwanda

**Frank Muhiza**
Company Representative

**Ahmed Meshref**
Data Enthusiast

**Amir Mugarura**
Data Science Expert

## Problem statement:

Agricultural products' value chains in cooperatives are overwhelmingly manual and private sector led. There are inefficiencies for sellers, farmers, wholesalers and retailers. Most cooperatives are not using their data efficiently. Cooperative data could be used to allow their members to have access to financial services like short-term loans from their banks or SACCO. The process takes time and farmers often seek an alternative income.

## Solution:

AICOS (Automated and Integrated Cooperative Operation system) is a service platform that tracks, automates and integrates all of a cooperative's activities and interactions with its members, including the stock performances of any member. This data will allow members to ask for loans from banks/SACCOs while waiting for their pay-checks from the cooperatives and factories. The AICOS product involves three main processes: data collection, data processing, and reporting and visualisation. The insights from the processed data are then shared with financial institutions that are working with the cooperative. After this process the cooperatives' members can easily be recognised by the financial institution based on her/his performance within their cooperative and this will allow or shorten the process of giving them any type of loan (long- or short-term loans).

**Market segment:** Our target market is non-financial cooperatives and our market segments are agriculture and transport cooperatives. The reason is that all of the cooperatives within those segments share an overall structure, so they can easily consume the same services within our product, which is sometimes impossible in other cooperatives' sectors.

# Jquicker | Rwanda

**Jobs Shumbusho**
Company Representative

**Irenee Ikibaruta**
Data Enthusiast

**Davy Uwizera**
Data Science Expert

## Problem statement:

This project started in July 2015 with the launch of the motorcycles tracking service. This product was needed because motorcycle-taxi riders and police were facing multiple challenges including:

- disputes between the motorcycles riders and travellers due to the price and distance done
- reported deaths of motorcycle-taxi riders due to the robberies
- difficulties tracking crimes and carrying out effective investigations by the Rwanda Police Force
- challenges related to the proper follow-up mechanisms to track and catch thieves
- lack of discipline, leading to the violation of safety requirements and traffic regulations, hence causing accidents
- moto-taxi riders still lacking financial support from recognised financial institutions due to unpredicted and poor financial records

## Solution:

Following the launch of this project, the system yielded some successful stories whereby we worked with the Police and Army to locate stolen motorcycles; in collaboration with these security services at least 42 motorcycles were recovered and handed back to the owners. For this to happen, JQuicker systems partnered with RURA so as to enhance its ongoing efforts to digitise transport systems through the issuing of transport smart cards on all motorcycle taxis operating in Rwanda. As the pilot in this field, we intend to upgrade this system and have it integrated with banks, microfinance institutions and telecoms mobile payments so as to help the user access their money. We believe that the cashless economy and financial inclusion of motorcycle taxi riders will foster the economic growth and wellbeing of 45,000 (current) persons and their families. The motorcycle taxi drivers will also be able to use their statements to access loans from recognised financial institutions.

**Market segment:** The more than 45,000 motorcycle taxis that operate in Rwanda.

# Botlhale AI | South Africa

**Thapelo Nthite**
Company Representative

**Derwin Ngomane**
Data Enthusiast

**Cobus Burger**
Data Science Expert

## Problem statement:

An investigation into the factors impacting financial exclusion in South Africa has shown that language is one of the most significant factors. Customer engagement is a key factor in driving under-served, low-income individuals to gain access to financial services and, more importantly, to use those services effectively. IsiXhosa and isiZulu speakers are the largest groups in South Africa making up 16% and 22,7% respectively. Yet they have the lowest probability of having a bank account with only 30% and 26% of them having a bank account. Non-English speakers make up more than 80% of the South Africa population yet banks offer most of their services in English thereby excluding most of the South African population.

## Solution:

Our solution is a multilingual chatbot for banking services. It allows users to connect directly to their banks and perform banking transactions using natural language, through text and voice messages. The user simply writes the transaction they wish to make and the chatbot will process the transaction (e.g. transferring money or buying airtime or electricity). The chatbot understands the intent of the message and performs the relevant transaction and response. We are helping banks and their customers in four ways. Firstly, we are simplifying banking for their customers by enabling them to interact with banks in simple, natural-language conversations and by having these conversations where their customers already are, on platforms like WhatsApp and Facebook messenger. Secondly, we help banks to build more personal relationships with their customers beyond just transactional banking by proactively helping their customers plan and take action to improve their financial lives. Thirdly, we reduce the banks' running costs by limiting the amount of human interaction required.

Lastly, and most importantly, we make banking more inclusive by interacting in languages that customers trust and understand.

**Market segment:** Our target is a subset of the 80% of the South African population that doesn't speak English as their first language and are not comfortable with the language. More specifically, people who use mobile-banking services or people who could be using mobile-banking services if they were accommodated. There is a continued growth in the number of people and financial institutions who engage through messaging platforms like WhatsApp. The ideal customer is someone who is not comfortable with English but wishes to engage with banks through their mobiles. We recently did a survey of non-English speakers in Cape Town, South Africa (which has mostly isiXhosa-speaking people) that showed that people would want to use our solution and their preferred chatting platform is WhatsApp.

# Inclusivity Solutions | South Africa

**Nigel Bowman**
Company Representative

**Ajayi Olabode Oluwaseun**
Data Enthusiast

**Hanjo Odendaal**
Data Science Expert

## Problem statement:

Inclusivity Solutions designs and operates digital insurance solutions that enable financial inclusion and address the protection gap in emerging markets. Seventy-five percent (75%) of Inclusivity's customers will not have cover when they need it most because they have stopped paying premiums, which increases their vulnerability. This high churn also undermines Inclusivity's sustainability.

## Solution:

Using interpretable machine-learning methods, we are building a model that predicts the propensity of customers to churn and the reasons why. The model enables Inclusivity to identify customers likely to churn and tailor business interventions that keep their cover active when it is at risk of being cancelled because of non-payment. Thus, more customers will be able to claim when cover is needed most.

**Market segment:** Inclusivity's insurance product is being sold to Equity Bank's mobile banking customers, who are predominantly from the mass market in Kenya. Customers who are the most vulnerable to income and expense uncertainty will benefit the most because Inclusivity can identify those customers with active cover who are most at risk of being unable to make a premium payment. Inclusivity can further provide tailored interventions based on the reasons for a customer being at risk of churning. For example, changing banking behaviour can indicate financial strain. Cover for that customer could be temporarily reduced or suspended until their financial situation improves.

# Bureau Vente | Uganda

**Bienfait Bitenyo**
Company Representative

**Ian Kalanda**
Data Enthusiast

**Nelson Mugisha**
Data Science Expert

## Problem statement:

Financial illiteracy among coffee farmers remains a significant barrier to the satisfaction derived from the use of financial service providers that would help them enjoy more yields from their coffee farming. Due to this illiteracy, farmers see no need to have bank accounts nor keep track of records that may allow them access to loans or savings benefits. More often than not, the middlemen have all information required by the financial service providers and hence take the benefits that accrue from the farmers produce such as competitive prices, discounts on farm inputs among others. It's for such reasons therefore, that BVL would like to champion financial inclusion/literacy among its farmers by bridging the gap between the farmers and the financial service providers through providing a platform that captures and stores all relevant information.

## Solution:

We have developed, using our existing data, a solution that includes farmers in the financial eco-system. With collected bio data, extensively conducted farm inspections and cumulative transactions, we are able to score out of the 25,000 farmers which ones are eligible for
- financial literacy course
- financial inclusion through access to savings (Creation of Financial Discipline)
- financial inclusion through loans (access to crop financing, agricultural intrants and soft loans to maintain families through off season hurdles

**Market segment:** Tier-one verified farmers (farmers that have a full record of bio data, transaction history and seasonal yield target.

---

# Akello Banker | Uganda

**Onyait Jean Anthony**
Company Representative

**Mwesigwa Enock**
Data Enthusiast

**Samuel Otim**
Data Science Expert

## Problem statement:

Low productivity among smallholder farmers is mostly caused by poor farming practices due to lack of knowledge (no extension services) and lack of modern farming tools (mechanisation or other tools). Access to these services and tools is both an issue of availability and efficient allocation. Most smallholder farmers cannot afford to acquire some of the modern tools of production. It is also not economical for them to fully own the tools since they have small farms.

## Solution:

Kelifarm, a data-driven, and mobile-enabled platform, allows farmers to access, order and share farm extension workers, tools and equipment. Some of the functionalities that our technology provides include:
- allowing farmers to identify available equipment and agricultural services within their area (this includes seed, animal traction, extension workers and tractor hire services)
- allowing equipment owners and commercial service providers to offer their equipment and services to farmers on credit
- allowing farmers to hire and pay for equipment and agricultural services
- guarantee payments until the service is provided
- allow the verification of users and service providers
- provide a feedback service for both farmers and service providers to allow for the development of a trusted online community
- match search requests with actual services available

**Market segment:** Smallholder farmers, service providers, low-income earners.

# e-Msika | Zambia

**Gilbert Mwale**
Company Representative

**Mark Musisha**
Data Enthusiast

**Mbuyu Makayi**
Data Science Expert

## Problem statement:

In Zambia, there are 1.6 million farmers with 98% of them being small-scale farmers. A majority of these small farmers can't afford to hire a full-time farm manager to provide professional farm management like on commercial farms. Even the ratio of government extension officers to farmers is one officer to 2000 farmers. This problem, coupled with a lack of access to high quality and affordable farm inputs, means that small-scale farmers often produce low yields hence failing to make money from selling it or even keeping some for consumption. We help small-scale farmers in remote areas to increase their farm yields by providing easy access to farm inputs and farming information using an Uber-like extension service application. What is exciting about this solution is that it will now give us the ability to create a financial record from their purchase of farm inputs and hiring of experts. This financial record could later be used to attract collateral-free farm input financing and insurance based on their transaction history.

## Solution:

This will be a mobile application and USSD application that a small-scale farmer will be able to use to find, hire and be visited by an agri-expert for guidance. All payments between the two parties will be managed using eMsika, that way we will keep a transaction history for the farmer, allowing us to determine their credit-worthiness for purchasing additional farm inputs.

**Market segment:** Small-scale farmers, mainly those in rural areas.

# Dytech | Zambia

**Chiyanika Nakasamu**
Company Representative

**Shadrick Simumba**
Data Enthusiast

**Chansa Kabwe**
Data Science Expert

## Problem statement:

The recent 2019 findings of the Rural Agricultural Livelihood Survey (RALS) which was jointly conducted by the Central Statistical Office of Zambia (CSO) and Indaba Agricultural Policy Research Institute (IAPRI) revealed that over 1.5 million household farmers (70% of Zambian population) depend on agriculture for income generation and about 40% of those household farmers are women. Only 14.9% of the entire household farmers have access to financial services. The report has also revealed that farmers have been facing many challenges such as low crop production, high crop yield losses and lack of financial assessment information on their farms. Smallholder farmers have limited access to financial services from financial institutions, thus perpetuating low incomes and contributing to persistent rural poverty. The question which has not been answered is how these small-scale, rural farmers can be financially included in the agricultural production and value chain.

## Solution:

Using low-cost drones for data collection on farm fields and data analytic software to analyse data from sensors and smart devices, we intend to develop prediction models that will help us do crop value forecasting, yield projection, crop growth patterns, crop counting, crop monitoring, soil fertility analysis and crop health assessments. This information will help farmers to make informed decisions that will help them with improved planning, decision-making and responsiveness in management, leading to better yields and boosting their profits. Farmers can also share the information with their input suppliers and financial providers, allowing them to have more inputs throughout the season. Financial providers can use this information to provide financial and insurance services to the farmers as they will have a clear insight to what is happening on the ground. We will also use matching value payment systems to segregate, segment, match and link continuous viable small-scale farmers with financed assets such as solar pumps for irrigation and tractors for enhanced farming.

**Market segment:** Smallholder female farmers who fall under the market segment of householder farmers, farming between two and three hectares, will benefit most. This is because they are among the farmers who have the capacity to produce more crops if they are empowered with smart farming techniques and access to financial services. These people make up 70% of the total household farmers in Zambia.

# Partners



# Supporting partners

South Africa



Rwanda



Uganda



Zambia



Ghana



Kenya



26

27

# How to find us

Get involved. Contact us.

**Dumisani Dube**
dumi@i2ifacility.org

+27 21 913 9510

+27 11 315 9197

i2ifacility.org

datahack4fi.org

🐦 @i2ifacility
💼 /insight2impact
f /insight2impact
📷 /i2ifacility

Established and driven by

Sponsored by

cenfri

FMT
FINMARK TRUST

mastercard
foundation

Microsoft

LIQUID
TELECOM