AGRIFIN ACCELERATE

Rural Connectivity Ideation Workshop

Introduction

Leesa Shrader & Andrew Karlyn
AgriFin Accelerate Program

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Nairobi
RURAL CONNECTIVITY IDEATION WORKSHOP

AFA Program Objectives

AgriFin Accelerate is a 6-year, $25 million program working in Kenya, Tanzania and Zambia.

AgriFin Accelerate will **support the expansion of digital financial services to one million farmers in Sub-Saharan Africa over six years, delivered by growing ecosystems of diverse service providers.**

**TARGET GROUP**

AgriFin Accelerate’s underserved **smallholder farmers** living on less than **$2.50/day**

With outreach to 50% women & youth focus.
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Approach: Innovation Focus

FOCAL AREAS FOR INNOVATION

Products & Services for SHF
Last Mile Distribution
Farmer Capability Tools
Technology Start Up Acceleration
Alternative Data & Credit Scoring
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Models to a Million

Digital mass market platform

Safaricom

Logistics

Credits

Market Access

E-Learning

AFAs roles include;
- Product development
- Business model
- Partnerships development
- Credit scoring
- User experience testing

Digital VSLAs

ZOONA

Mobile Services

ZSLA

Savings

Payment

Insurance

AFAs roles include;
- HCD research
- Benchmarking
- Bank partnerships
- Product development

TELCO & MFI Bank partnership

MFI Bank

Halotel

Halopesa

VSLA Coordinators & Agents

VSLA

Savings

Loans

AFAs roles include;
- User experience testing
- Data analysis
- Human core design prod. dev.
- Digital client engagement

Managed Digital Platform

FTMA Platform

Inputs

Contract buying

Training

Insurance

AFAs roles include;
- Product development
- Business model
- Partnerships development
- Strategy development
- User experience testing

Digital Learning & Engagement

E-Learning Platform

E-Learning

Loans

Payments

Engagement

Linkages

AFAs roles include;
- Technology build
- Data analytics
- Content development
- Partnerships

3-5 Million Farmers

660K VSLA Groups

1 Million Users

1 Million Customers

1.5 Million Users

1 Million Customers
Connected Rural Hub Concept

- Reliable Connectivity
- Rural Solar & Energy Provider
- Bank Agent/ Mobile Money/ Insurance
- FMCG
- Welcome & Help Desk
- Try Things Out
- Client Acquisition
- Research & Data Collection
- Health & Nutrition Kiosk
- Agricultural Extension Services
- Buyers & Aggregators
- AgroDealer & AgroVet

WELCOME

Ag & Other Min-Warehousing with Digital Inventory and E-Receipting

Agricultural Extension Services

Transport Services

Plug-In Stations

Reliable Connectivity

Rural Solar & Energy Provider

Bank Agent/ Mobile Money/ Insurance

FMCG

Welcome & Help Desk
Try Things Out
Client Acquisition
Research & Data Collection

Health & Nutrition Kiosk

Agricultural Extension Services

Buyers & Aggregators

AgroDealer & AgroVet

Cold storage

Ag & Other Min-Warehousing with Digital Inventory and E-Receipting

Welcome & Help Desk
Try Things Out
Client Acquisition
Research & Data Collection

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Agricultural Extension Services

Buyers & Aggregators

AgroDealer & AgroVet

Cold storage

Ag & Other Min-Warehousing with Digital Inventory and E-Receipting

WELCOME
## RURAL CONNECTIVITY IDEATION WORKSHOP

### AGENDA

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>8:30 to 9:00</td>
<td>Opening &amp; Rural Connectivity Overview</td>
</tr>
<tr>
<td>9:00 to 10:00</td>
<td>Explore Models of Rural Connectivity Hubs + Lessons Learned</td>
</tr>
<tr>
<td>10:00 to 10:30</td>
<td>Coffee Break</td>
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<tr>
<td>10:30 to 12:00</td>
<td>Explore Use Cases for Rural Connectivity</td>
</tr>
<tr>
<td>12:00 to 12:45</td>
<td>Lunch</td>
</tr>
<tr>
<td>12:45 to 2:15</td>
<td>Ideate Around Rural Connectivity Hubs &amp; Partnerships for Kenya</td>
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<tr>
<td>2:15 to 2:45</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>2:45 to 3:45</td>
<td>Synthesize Findings</td>
</tr>
<tr>
<td>3:45 to 4:00</td>
<td>Next Steps and Closing</td>
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</table>
### Rural Broadband Connectivity Infrastructure Varies by Costs (Capex/Opex) | Technical Deployment | Partner

<table>
<thead>
<tr>
<th>Cost</th>
<th>Description</th>
<th>Organizations</th>
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</thead>
</table>
| $250K Tower | • High capital construction by mobile network operators  
• Mobile phones connect to a cell tower which reaches the internet cloud and fetches data | MTN, Safaricom, Airtel, Equitel |
| $100K Tower | • Low-cost tower solution  
• Reduces the total cost of building and running a mobile network site by up to 70%  
• Reduces RoI to less than 5 years | Huawei, Ericsson, Safaricom |
| $100k – $200k Satellite | • Internet signals are sent and received by orbiting satellites  
• Lower cost compared to cables or setting up a tower in remote areas  
• More efficient than dial-up | Avanti, Inmarsat |
| $50K Fixed Wireless Microwave | • Tower rental, equipment placement  
• Point to Point microwave  
• Virtual networks | Vanu |
| $500 - $1000 Hotspot | • Resells internet from a backhaul system, e.g. fibre cable or cell towers, to multiple users  
• Can be managed remotely through hotspot software | Surf, WiWindu |

**NB:** While the cost implication for different towers are different there exists interdependencies between some of the smaller, lower-cost infrastructure and the large infrastructure e.g. Wi-Fi hotspots depend on the cell towers.
E-choupal (India) – Off-taker-led ICT-enabled agricultural trade system, evolving into services and FMCG retail points

**BUSINESS MODEL**
Some soft finance from ITC to cover costs, while entrepreneurs (Sanchalak) also bear costs and raise revenue from e-Choupal.

- **CapEx:** (borne by ITC)  
  ~$800 to establish an e-choupal with dial-up connectivity and ~$2,000 if a VSAT has to be mounted

- **OpEx:** (borne by Sanchalak)  
  Electricity and internet – ~$60 to ~$160 p.a.  
  Support and maintenance – ~US$100 p.a.

- **Revenue:**  
  Sanchalak earns income from commission on processed product

**SUCCESS FACTORS**

- Anchors on existing village institutions  
- Tries to understand the communities’ needs using ex-middlemen to conduct surveys in setting up new e-choupals  
- Provides support to Sanchalak, incl. ICT and management training, and encourages them to offer other services  
- Partnerships with academic institutions and NGOs to provide appropriate info  
- Trades a wide varieties of produce, including soybeans, coffee and oil seeds limiting seasonality of transaction volume

**OVERVIEW**

- **Core offering:** Information and market hub for agricultural trade, extension services, and rural retail (sales) points.
- **Target users:** Farmers
- **Led by:** ITC Limited (an Indian Conglomerate)
- **Launched in:** 2000

**Reach:**
- 6,000+ hubs, 4 mil. farmers in total (as of 2011)
- Each e-Choupal serves ~600 farmers in 5km radius

**Infrastructure:**
- Phone line or VSAT connection, powered by solar  
- Installed at Sanchalak’s house

**Key partners:** N/A

VANU (Rwanda) – Low-energy, solar-power cellular network

**OVERVIEW**
Core offering: Provides voice and data connectivity, as well as mobile money in areas which previously had limited to no coverage.

**Target users:** Rural population

**Founded by:** Vanu Bose

**Launched in:** 2016 (in Rwanda)

**Reach:**
- 31 cell sites as reaching 100,000 people
- Plan to reach 1 million people in Rwanda once agreements with MNOs have been firmed up

**Infrastructure:**
- A mini-server contained in a water proof case, powered by solar
- Masts cover the road and 2km on each side of it

**Key partners:**
- MTN
- Airtel
- BRCK
- Facebook

**BUSINESS MODEL**
VANU provides coverage as a business – they don’t have any subscribers but work with carriers to extend their networks to the rural areas

**CapEx:**
~$27,000/site initial set up

**OpEx:**
~$8,400/year

**Revenue:**
- ARPU - $1/month paid by the users
- It is market driven and therefore sustainable w/o subsidies
- There is a 70:30 revenue share between VANU and the MNOs


**SUCCESS FACTORS**
- Reduce the power usage of their sites which results reduction in power needed for these networks i.e. they can use solar
- Works as a wholesale mobile network; they don’t have subscribers each carrier use the network and pays VANU when their subscribers use it
- Government support in adopting a solution relevant to the Rwandan market

**Site set-up**
Low power technical innovation (50W-90W of power) transmitting 2GSM carriers

**Uses**
- Payment for alternative energy (Use cases are still in their early days and are projected to expand)

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**Case Study 2**

**VANU (Rwanda) – Low-energy, solar-power cellular network**

**Services offered**
- Low energy cellular network that can be used across mobile service providers

**Mobile Service Provider**
- Regular voice and data connectivity as well as mobile money

**Rural Population**
- Payment for alternative energy (Use cases are still in their early days and are projected to expand)
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Case Study 3

Rural TaoBao (China) – Rural e-Commerce Platform

OVERVIEW
Core offering: Facilitates C2C, and recently B2B transactions between SHFs in rural China and consumers in urban centres. Target users: Rural population Led by: Alibaba Launched in: 2003 Reach:
- 30,000 service centres across 700 counties in 29 provincial-level regions
- Served more than 1 million farmers in 2015 Infrastructure:
- Installed at entrepreneurs shop
- Connectivity enabled by Alibaba in collaboration with the local government
Key partners:
Central and local government
Ant Financial

BUSINESS MODEL
Rural service centre agent charges farmer commission for selling products to buyers, and either directly deliver or work with small delivery companies to get goods to urban buyers

CapEx:
Alibaba establishes the service centers (plans to invest $1.6 billion in 100,000 service centres by 2019) ~$16,000 per centre

OpEx:
Incurred by the store owner

Revenue:
- Commissions for facilitating e-commerce
- Advertisements

SUCCESS FACTORS
- Holistic provision of services required by the rural population e.g. connectivity, some training, and financial service products (payments, loans and insurance through Ant Financial)
- Government support to provide easier access to computers, tax credits, store space etc.

Sources: China Daily, “Rural Taobao brings e-commerce to the countryside”, 2017; Business for eTrade Development, “Rural TaoBao: Alibaba’s Core Rural Ecommerce Business Development Initiative”, 2017; China Daily, “Rural Taobao yields benefits for farmers by analyzing big data”, 2018; Dalberg Analysis
NetHope (Uganda) – Demand Aggregation enabling ISPs to serve low-ARPU customers

**CASE STUDY 4**

**OVERVIEW**

**Core offering:** Bundle the procurement activities of USAID Implementing Partners (IPs)

**Target users:** Refugees (Initially)

**Led by:** NetHope and USAID

**Launched in:** 2018

**Reach:**
- 10 members (1 per site) in northern Uganda with NGOs distributed across the region with 2MB per site.

**Infrastructure:**
- MNO cell towers

**Key partners:**
- USAID
- USAID Implementing Partners
- MNOs

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**BUSINESS MODEL**

The communications service provider enters into a new business and partnership with an implementing partner or with governments to improve programming

**CapEx and OpEx**

- NetHope membership model negotiated w/ MNOs

**Revenue:**
- Aggregation and projections incentivize MNOs to negotiate price and expand customer base
- Two savings negotiated: (i) price per MB (+/- 50% per MB) and; (ii) relocation savings reduced by 65%

**SUCCESS FACTORS**

- The use of non-exclusive agreements

**Sources:** Interviews with the organization’s management
### Key learnings from programs deployed in Kenya

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<th>Mawingu Networks</th>
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<th>Safaricom Digital Village</th>
<th>Surf Express WiFi by Facebook</th>
<th>Arid Land Information Network</th>
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<td>Rural hotspot run by TV white space spectrum band</td>
<td>Satellite connectivity for digital financial inclusion</td>
<td>Rural Hotspot service run via MNO existing agent network</td>
<td>Hotspot service in public spaces supported by ISP backhaul</td>
<td>Community knowledge and ICT training centres</td>
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#### Mawingu Networks
- **Business Models:** Sustainable models require innovation that will decrease the high operating expenditures
- **Infrastructure:** The minimum viable product of the technology utilised has to be proven to work through pilots before scaling programs e.g. BRCK
- **Service offerings:** Content creation should not be static but revised based on insights gained from data requiring investment from the implementers

#### Equity Bank Rural Connectivity
- **Business Model:** The set-up of connectivity hubs is most feasible when incorporated into existing, operating businesses
- **Infrastructure:** In a joint venture set-up with communities initial capital may hinder the launch of some of the programs
- **Service offerings:** The needs of the community should be taken into account when implementing connectivity hubs to ensure uptake of the product

#### Safaricom Digital Village
- **Success Factors:** Leveraging existing backhaul infrastructure can keep buildout costs low and enable fast rollout
- **Partnership with local entrepreneurs for hosting and distribution can drive local revenue and engagement**

#### Surf Express WiFi by Facebook
- **Business Model:** The set-up of connectivity hubs is most feasible when incorporated into existing, operating businesses
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- **Service offerings:** The needs of the community should be taken into account when implementing connectivity hubs to ensure uptake of the product

#### Arid Land Information Network
- **Success factors:** Strategic placement of hubs will determine access and thus success, particularly in dispersed/transient pastoralist communities.

#### Local Learnings
- **Remote management easily deployed/managed even in rural areas**
- **PPP model leverages TVWS to bridge middle mile where commercial solution not viable**
- **Success Factors:** Global companies, e.g. Microsoft, with significant scale and resources can facilitate testing new approaches to extend access
- **Local integrators can deploy and maintain the software and hardware with minimal training**
- **Policy exemptions can be a blessing and curse, with expiration of exemptions a significant risk on deployment**

#### Business Models
- Sustainable models require innovation that will decrease the high operating expenditures
- The minimum viable product of the technology utilised has to be proven to work through pilots before scaling programs e.g. BRCK
- Content creation should not be static but revised based on insights gained from data requiring investment from the implementers

#### Infrastructure
- The needs of the community should be taken into account when implementing connectivity hubs to ensure uptake of the product

#### Service offerings
- Leveraging existing backhaul infrastructure can keep buildout costs low and enable fast rollout
- Partnership with local entrepreneurs for hosting and distribution can drive local revenue and engagement
- Subsidies can be provided for specific users through partner pays models
- Revenue models can be deployed to minimize costs – enabling hotspots to pay for themselves

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**Sources:** Dalberg analysis; Stakeholder Interviews; Interviews with organization management
Thank You!