



How to Grow and Sustain the Digital Harvest?

The proliferation of mobile phones among rural households has seen the number of digital solutions developed to help farmers to improve their yields and incomes, increase.

The Digital Harvest is composed of ICT solutions that deliver services directly to farmers. Through these 150+ solutions, farmers can get information on market prices, good agronomical practices and the weather and source services including transport and produce aggregation. These non-financial agricultural services are instrumental in reducing the risk of delivering financial services, as a farmer who knows the best time to plant, how to apply fertilizer and where to get a good price for the harvest, is more likely to be able to pay back an input loan.

Despite their initial success, there are already signs of 'post-harvest losses', within the 'Digital Harvest' with

some solutions disappeared from the market due to flaws in their business models.

AGRA's interest is in understanding which ICT4Ag solutions are sustainable and valued by farmers so that only the scalable and lasting solutions are supported. Earlier research by GSMA, CTA and Mercy Corps concluded that flawed business models are the main cause of underperforming solutions. †

To build on this, AGRA supported an assessment of the business models for fifteen ICT4Ag Solution providers in Kenya, Tanzania and Ghana. As the sample is small (<10%) we do not claim that the review is representative of the universe of ICT4 Ag solutions. However, it does yield insights in flaws, and possible improvements, needed to grow and sustain the solutions that offer real value to users.

- Lessons for Sustainability: Failing to Scale ICT4Ag-enabled services, CTA, 2016

- ICT based solutions for Value Added Services, MercyCorps AgriFin Accelerator, 2016

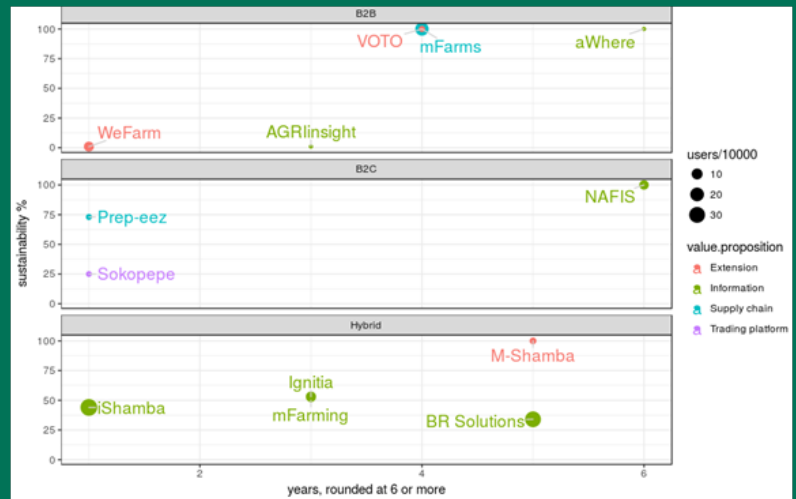
- Agricultural Value Added Services (Agri VAS): Market Opportunity and emerging business models, GSMA, 2015

What do sustainable ICT4Ag solutions look like?

The business model review found that five out of fifteen solution providers were sustainably delivering services. In the graph it can be seen that there is no clear relation between sustainability and business model, type of services or user numbers. The longer the solution providers are in existence, the more likely it is that they are sustainable. The explanation might be that the non-sustainable solutions disappear from the market after five years of piloting and probing.

The successful solution providers:

- Have revenue models where agribusinesses or institutions pay for smallholder farmers to access the service: hence the paying client differs from the user;
- Combine cheap digital delivery channels with expensive face-to-face promotion and marketing to gain trust from smallholder farmers and organize regular customer feedback;
- Offer a combination of valued and focused services in partnership with trusted organizations that give access to content,



- users or infrastructure;
- Have copyright protected technology and key performance indicators to monitor the business;
- Have diversified sources of income: subscription and usage fees combined with advertisements and commissions and;
- The selling of data collected through the solution is often mentioned as a revenue stream, but it is too early to see success cases of this potential revenue stream.

The picture below summarizes the findings for each segment of the business model canvas used for the assessment. The weakest areas of the business models of the collective 15 solution providers were found to be customer segmentation, customer relationship, cost structure, and revenue model.

Key Partners	Key Activities	Value Proposition	Customer Relationships	Customer segments
<ul style="list-style-type: none"> • Agribusinesses • NGOs • Donors • Governments • Mobile Network Operators • Content Providers 	<ul style="list-style-type: none"> • IT Development • Marketing • Content Development 	<ul style="list-style-type: none"> • Information services (weather, market prices, agronomic practices) • Extension and advisory (tailor made by experts) • Trading platform (buying and selling of inputs and produce) • Supply chain mgt. (aggregation and transport) 	<ul style="list-style-type: none"> • High % inactivity • Few feedback loops • Face to face radio most used 	<ul style="list-style-type: none"> • Customer segmentation and market research in most cases not undertaken • No user centered design in most cases • Illiteracy, language, tech savviness, phone type, age, gender, are all relevant
	Key Resources		Channels	
	<ul style="list-style-type: none"> • Intellectual Property rights • Human resources • Content and Data collected 		<ul style="list-style-type: none"> • SMS (text) • USSD (#234*) • IVR (press 1 for...) • Web/app (internet/ smartphone) 	
Cost Structure		Revenue Streams		
<ul style="list-style-type: none"> • Largest cost item is staff and marketing • Very little cost consciousness (on cost of customer acquisition, break even point, efficiency and sustainability indicators) 		<ul style="list-style-type: none"> • Subscriptions fee (once, monthly, annual) • User fee (per click or message revenue share with MNO) • Subsidies or government budget • Advertisement, data selling and cross selling hardly mentioned 		

What is hampering ICT4Ag solutions to grow and sustain?

1. Smallholder farmers have little ability or willingness to pay for services.
2. Mobile network operators propose unfavourable revenue sharing models.
3. Affordable patient capital to finance scaling of solutions is difficult to find.
4. Solutions have no clear revenue model and struggle to fund their growth.
5. The limited segmentation of the customers, weak relationship management and limited customer feedback mechanisms, reduce user uptake and retention.
6. Farmers mistrust or resist to innovation and technology if they feel automated payments and push messaging are using their airtime (phone credit).
7. Extension workers and traders, who are the potential promoters of the solutions, might fear for their job or income when trading is automated, prices become transparent, or extension messages are digitized. The need for change management at that level is often not recognized.
8. Solution providers insufficiently track financial key performance indicators as a measure of sustainability and have a limited view on their cost drivers.

These flaws in business models and the lack of a clear business case for users, lead to solutions that do not have robust revenue models or do not empower customers to adopt the solutions.

How can ICT4Ag solutions grow towards sustainability?

ICT4Ag solutions could become more sustainable, attract more resources and have more users if:

1. A freemium revenue model is adopted and promoted by early users - this allows the solution to demonstrate its value before customers are charged;
2. A user-centred design process is taken, where the content becomes more farmer-centric and the solution more user-friendly. Bundling with services that farmers have a willingness to pay for, credit for example, might improve uptake.
3. Change management support is provided at the level of promoters and institutions adopting the solutions;
4. Symbiotic partnerships are forged with other providers to share field agents, customer acquisition, feedback services (call centers) and content generation, which could reduce costs of services delivery;
5. The providers unite to lobby the mobile network operators for an equitable revenue share percentage and the financiers for patient affordable capital instruments;
6. A strong business case for all actors involved can be presented (target customer, promoter and content provider) and an exit strategy for donor support is envisaged.

All 15 case studies are publicly available through below mentioned websites. We would like to extend our sincere gratitude to the fifteen solution providers that volunteered to share their successes and challenges in making ICT work for smallholder farmers:



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