

Distributing with ICT

Distributing Weather and Agronomic Information Using ICT

If your organization seeks to help farmers increase productivity and profitability while strengthening your own business, distributing weather and agronomic information is an effective way to achieve these goals. It also helps build and maintain strong relationships with your farmer customers. Offering weather forecast data provides farmers daily information for tactical decision making and establishes the trust necessary for adoption of a new agricultural technology, crop protection, improved seed, hybrids, and even new crops. Combined with support information services such as market prices, agronomic tips, harvest and growth stage predictions and alerts, you can not only build a powerful relationship with farmers, but more importantly arm them with information to help increase yields, efficiency and profitability.

This is a quick guide on the steps to define, build, and deploy a weather and agronomic information system for ICT. This is by no means a comprehensive guide, as there are many ways in which such a system can be implemented, and technology options are constantly changing. However, this document offers some basic information on how to start the process, and offers resources for further consideration.

1 . Identify and Characterize Your Audience

Characterizing and understanding the audience you want to provide information to and what exactly that information is, is critical to success. The initial step is to characterize the audience you want to provide information to and what that information will be. The user profile you develop will help answer many of the technology questions posed later. Begin seeking information such as education level, technology exposure, their ability to pay for a phone and phone service, how

they make decisions today, and how they would use a forecast. Having this information can significantly impact the selection of the best and most appropriate technology solution for your target audience.

2 . Determine a Delivery Mechanism

There are a variety of options in how you could send information to farmers. Some of these mechanisms depend on certain handset phone technology and software requirements, but some will work on almost any device. Here are just a few options, listed by increasing cost and complexity.

- **SMS.** Text messages can be sent in bulk very affordably.
- **Voicemail.** Audio messages can be useful for illiterate farmers.
- **Mobile Applications.** Custom mobile apps can be developed using Android or iOS to deliver very specific and visual information. Even training materials can be packaged (see SAWBO)
- **Third Party Chat Applications.** Whatsapp, Kik, Facebook etc. Social networking tools are prolific in emerging economies. Sending information via social networking tools might be the way forward.

3 . Define the Value and Seek Partnerships

If you can clearly articulate the value of the service you wish to provide, then finding the resources to pay for the service becomes easier. The assumption might be that the farmer pays for the service but this may not always be the best path to success. Unless the value is proven to farmers (I buy this service for x amount and my income will increase by x amount), then buy-in from farmers may be difficult.

There are ways to pay for such a service. Your own organization may get enough value from providing the service that it makes sense to self-fund it. You could provide a freemium to premium service, or you could find other participants in the ag value chain such as processors, ag services, buyers, or if you have a large enough constituency, even financial, insurance and telecommunications service providers.

4 . Find a ICT Technology Service(s)

There are two primary options for pushing information to end user phones: either by working directly with telecommunications companies (e.g. Orange or Vodaphone) or through third party services. Telecommunications companies typically have API standards and protocol for pushing information through their network, but it will be different for each company you work with. Third party services have the advantage of taking care of the relationship and interfaces with multiple service providers for you, i.e. your users can use any service provider and you only need to build one API integration, though third party services can be more expensive. The best option may be to work initially with third party services and when usage increases, consider a direct relationship. Some examples of third party service integration companies are list below. Most support SMS, voicemail and other integration services.

- Twilio
- Tropo
- Plivo
- Africa's Talking

5 . Identify Content Providers

Content providers supply content and data for the applications you build. Perhaps the most common type of data of interest to farmers is weather, and aWhere's API's provide historical, forecast and agronomic models. Other types of information include agronomic tips which can be collated from local extension experts and/or groups like CABI. The combination of aWhere's agronomic models and a well-defined crop calendar effectively results in a personalized crop calendar for every farmer. Other information sources might include market price data collected by government or cooperative organizations - or even other agronomic services working in other parts of the value chain.

6 . Define Supporting Tools

Pushing information to farmers is helpful, but that alone is just a one way flow of information. Enabling information flows to be bi-directional and preferably along the value chain can be far more powerful. Here are several ways information

systems can be set up to be multi-directional.

- **Call centers and call center applications.** Having a call center to support and backstop information sent to farmers allows for both a direct touch point and feedback from farmers. Agronomists manning a call center and more sophisticated information systems apps at a farmer's fingertips can offer far greater detail than a text or voice message.
- **Mobile surveys.** When extension and support agents meet with farmers and cooperatives in the field, there is an opportunity to interview farmers on a regular basis and get feedback. There are a number of mobile survey solutions available, including open source solutions such as Open Data Kit.
- **Phone Applications.** Companies such as GeoPoll and Poll Everywhere allow SMS based polling to collect data and information from the field or amongst a particular audience.

7 . Build, Test, and Deploy

As always, any system needs to be fully vetted, tested in the marketplace with prototypes, engineered, tested and deployed. Many companies employ their own developers for this task, however, there are also outsource options, and some companies specialize in ICT applications.

One emerging alternative to building your own platform from scratch is to take advantage of platforms that have been built by others. There a growing number of companies building platforms that provide turn key services for rapidly creating your own ICT campaign - especially if they already work in the region and with your local network providers.

8 . Maintain, Support, Iterate, and Improve

Any application must be maintained, supported and improved upon. The product is not just the technical service but also the technical extension and support of the service to ensure long lasting and sustainable adoption.

9 . More Information

Survey Results

aWhere conducted a small survey among some of its ICT practitioners to learn more about their lessons learned working with farmers. Here are some of the more relevant responses.

What has been the biggest barrier for farmers adopting your service?

- High cost to farmers for SMS.
- Farmers struggle to send SMS format correctly when replying to a survey.
 - * Extension has traditionally been free, so arriving at a sustainable business model is a challenge to any new entrants to the space.
- Literacy and adaptation to information technology.
- Access to mobile phones.

What advice would you give other ITC practitioners hoping to reach farmers?

- Since farmers live in rural areas with poor signals, find an alternative method cheaper than SMS but has direct communication to farmers.
- Develop an in-depth understanding of the farmers you plan to work with. Understanding the farmers will enable to you better meet their needs.
- Offer bundled services that includes the SMS, with voice messages and a call center. Provide original content that suits the needs of the local farmers supported by a strong deployment.

We Can Help

We'd love to help you implement an agronomic ICT system for your farmers. Contact us at beawhere@awhere.com to discuss ideas!