aWhere: Powering agricultural intelligence in the developing world with APIs

aWhere uses the Apigee API Management Platform to provide critical agricultural and weather data and analysis to farmers around the world confronting the challenges of climate change and population growth.

Google Cloud Results

- Replaces batch data file deliveries with real-time access to agricultural data
- Delivers training to 400,000 Ugandan farmers and intermediaries on satellite data-based information services with aWhere APIs
- Sends real-time weather alerts to farmers in sub-Saharan Africa to maximize crop yield

1M API calls/month get actionable data to farmers

aWhere is transforming the future of agriculture by delivering agricultural intelligence to farmers, commercial growers, commodity traders, and policy makers worldwide. By providing a level of visibility and insight previously unavailable, aWhere is helping to transform how agricultural decisions are made. As a B-Corporation, aWhere is committed to returning value to shareholders not only as revenues, but also in terms of social impact.

Growing agricultural intelligence services

aWhere's founders met while conducting agricultural research in Kenya. The research was aimed at enabling aid organizations to intervene in crisis situations like famines and floods by sending seeds to farmers. The aid organizations found that they were sending the wrong varieties of seeds, and that they would end up having to send money when crops wouldn't grow. The researchers began focusing on projects that could match specific climates with seeds that would grow in any given combination of soil type, growing season, and weather.

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The United Nations Food and Agriculture Organization (FAO) projects the global population will reach nine billion people by 2050, and that food production consequently must increase by 70 percent. This means that yield in the developing world needs to double. A significant factor hindering the increase of food production is the lack of access to high-quality agricultural data for making informed decisions. aWhere is providing this data, especially around weather variability and climate change, to a global population of farmers who can no longer rely on historically predictable seasons for rain-fed agriculture.

Years of work in this area led to the founding of aWhere in 2001. After a series of changes to the business model, the company is now dedicated to leveraging its proprietary weather data for analysis and modeling to provide agricultural intelligence that helps to feed the world. To get this information reliably into the hands of the farmers that need it, aWhere has in recent years turned to APIs and the Apigee API Management Platform from Google.

aWhere leverages APIs to deliver agricultural information services to large-scale and small-scale farmers, agricultural extensions, global industry, and academia. The company has been extremely successful in developing a market for its innovative and highly accurate weather models. In addition to growing a traditional customer base in the developed world, as a B-Corporation, aWhere is committed to extending the reach of its services to farmers across the developing world.

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Apigee provides aWhere all of the API management platform features around security, user management, and proxies that are required to work with clients of all sizes. Some multinational customers had been happy to get data from aWhere in large batches on a daily basis, not having experienced the power of APIs to provide real-time, on demand data. Since implementing Apigee, they've come to appreciate the benefits of using the aWhere API and all of the flexibility it provides them.

aWhere has found the user management features in Apigee to be especially helpful in enabling the company to pull user data into its logging environment in order to do deep analysis at the individual user level. Since aWhere has a very diverse user base ranging from sophisticated data scientists to non-profit project managers, this kind of data provides invaluable insight into what kinds of improvements and additions can best serve users.

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Meeting the challenges of global food production

The company's biggest current initiative is a partnership with the World Bank called the Agricultural Intelligence Observatory. The Ag Observatory is tasked with getting robust agricultural meteorological data into the hands of people across sub-Saharan Africa who can take action based on this information. aWhere provides weather data with an agronomic focus and insights to governments, non-profits, and farmers who need to know when to plant or when the conditions might be conducive to pests or disease.

The Ag Observatory teaches agronomists, meteorologists, and data analysts, mainly from the public sector, how to integrate this data into their reports. National organizations often create advisories which are sent out to farmers in countries that are struggling with extreme weather variability.

The Ag Observatory project provides technical trainings on key open source programming and geospatial tools (R and QGIS). aWhere provides trainees access to its API, which is often the first time they've used one. Trainees also learn to access the developer portal where they become active participants in the community forum.

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Delivering real-time agricultural intelligence

Aside from distributing this information through traditional channels like Agricultural Extension agents, radio, and television, some private sector organizations have come up with ways to get data directly into the hands of farmers. In Kenya, a company called Amfratech uses aWhere APIs to send text messages directly to pastoralists needing fodder for their herds. This is a promising channel for delivering critical agricultural information, as not all farmers or pastoralists have access to television or even reliable electricity, but most have at least a basic mobile phone that can receive texts.

aWhere has also recently completed the four-year "MUIIS Service Bundle" project focused on providing a bundle of services to farmers in Uganda that includes weather and agronomic tips as well as crop insurance. To support these services, satellite imagery was used to determine drought, and farmers would get payouts if they were affected by it.

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The project was focused on providing agronomic and weather information as well as financial services to farmers. aWhere provided pest and disease modeling to alert farmers via text message if conditions are right for a certain pest or disease to flourish. An interesting outcome is that one of the consortium members is transforming this service from a project funded by the Dutch government into an independent business.

Empowering farmers for a changing world

While aWhere is focused on continuous innovation in the type and quality of agricultural intelligence it provides to its diverse set of clients, it's equally as concerned with further democratizing access to the data.

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