

Ag industry ripe for tech disruption

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From left: Eduardo Garcia, crop adviser with California Coast Crop Consulting; Robert Sisson, retired programmer with IBM in Sacramento; Michelle Sisson, affiliate with Tufts University and Robert's daughter, Joy Cowden, instructional design specialist with West Hills College Coalinga, were part of a team at the Coalinga hackathon event. As California struggles with its fifth consecutive year of drought, technology innovators say the agricultural industry is ripe for disruption.

Introducing new technology to the traditional farming process has been a goal of many Silicon Valley companies for years, but only recently have innovators met and worked closely with Central Valley farmers.

"We've seen a rush of companies coming to market in recent years," said Seana Day Hull, director of strategy and business development for AgTech Insight. "There's often an application disconnect between the developers and growers."

Based in Salinas, AgTech Insight is an advisory business seeking to bring technology, agriculture and investment together. The group partnered the WET Center, Lyles Center at Fresno State and San Francisco-based Royse Law Firm to host the first "Silicon Valley Meets Fresno" event last week.

By bringing together Bay Area venture capitalists and investors with local tech entrepreneurs and growers, Hull said the event seeks to facilitate cross-industry collaboration.

The meeting will also help bring more investment directly to the Central Valley, a profitable move since total investment in ag technology topped \$2.3 billion in 2014, according to a recent industry report from online investment

platform AgFunder.

“We really want to highlight what’s going on in our area,” Hull said. “There’s a lot of fragmentation in the market and investment is flooding into Silicon Valley but there’s lots of know-how right here in the Central Valley.”

Events aimed at bridging the gap between the tech and farming worlds have popped up all over the Central Valley this spring and many groups hope to spark innovation within the industry.

West Hills Community College District sponsored an agricultural “hackathon” recently, inviting code writers from all over the state to meet with local food producers in hopes of developing agriculture-themed software.

Numerous groups including the U.S. Department of Agriculture, California Farm Bureau Federation and California Association of Pest Control Advisers supported the Apps for Ag event.

“We got a lot of interest on both sides. This is a big opportunity for all involved because of the potential for money and big networking opportunities,” said Clint Cowden, director of the Farm of the Future at West Hills College Coalinga.

Olivier Jerphagnon, CEO of Silicon Valley-based PowWow Energy, agreed and said the event helped people from different backgrounds improve the agricultural industry.

“There’s been a lot of interest in industries not already disrupted by tech innovation,” he said. “Farming is a very traditional industry but lots of growers are interested in technology and understanding how to use it.”

PowWow Energy had several programmers at the event, working in teams with local farmers and students to create apps for the competition. Projects attempted to solve problems surrounding irrigation schedules, pest control and budget tracking.

Crowd sourced pest prediction mobile app SWARM was awarded first place in the hackathon event and will have the opportunity for a private meeting with Paramount Farming Company and other sponsors.

A team focusing on refining tomato irrigation scheduling took home second place at the Apps for Ag event, highlighting the continued threat to the Central Valley’s water supply and the need for improved irrigation technology.

The region’s water shortage has been at the forefront of the industry for years and has recently caused a local hydroponics company to see the potential for commercialization of its product.

Christian Long, vice president with Fresno’s Current Culture H2O, said the company has turned its attention to commercial applications for its hydroponic irrigation systems for market growers with less than five acres. Founded in 2006, he said the company holds two utility patents and ships its products throughout the world.

At first glance, hydroponics systems may sound like they require more water than traditional methods, but Long said the systems are more efficient, recycling water and nutrient solutions. The company’s hydroponics systems end up using 10 to 40 percent of the water required for the same yield of field grown crops.

The method is not yet equipped to meet the demand of large-scale farming but perform well for crops needing a controlled environment atmosphere.

“As resources become more limited, [growers] are going to have to lean more towards this technology,” Long said. “We’ve seen about a 45 percent sales increase year-over-year.”

While a majority of the Current Culture H2O’s clients use the systems for cannabis grows, the company sees a growing need with the drought and is looking to move further into the food crop industry.

“Our method is very considerate of minerals and water usage,” Daniel Wilson, president of Current Culture H2O said.

“We’re seeing a large potential for food production.”

The drought has accelerated the industry’s need for innovation and industry players anticipate seeing an increased adoption of new and unconventional technologies.

“The drought has really made everyone think ‘How do we increase that water conservation?’” Cowden said. “All the low-hanging fruit has already been picked. We need to bring in big data now.”

Hull agreed and said the drought is just the first of many strains the industry will face in the near future. The growing global population and demand for more food will also require increased productivity.

“Tech intervention is really the only way now,” she said. “It’s a case of necessity being the mother of invention.”

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