

Raleigh Innovators Program: A Closer Look at Rocktron, Seachange, and Smart Farm

Editor's Note: The Raleigh Innovators Program is a 3-month lean startup and design-thinking accelerator that aims to cultivate breakthrough mobile, cloud, and collaboration technologies. Supported by a coalition of organizations including Citrix Startup Accelerator, Red Hat, Cherokee, HQ Raleigh and the City of Raleigh, there are 12 teams participating in this year's program. Of those teams, four are "intrapreneurial" teams from Red Hat and Citrix, three are clean tech teams supported by Cherokee, and the rest are early-stage startups. This blog series will take a closer look at the 2015 cohort. Today we take a look at Rocktron, SeaChange, and Smart Farm.

News headlines continually highlight the impact the environment has on businesses and communities. The clean technology companies participating in the Raleigh Innovators Program are developing market-driven, technology-based solutions to help address these environmental challenges. In doing so, these innovators strive to disrupt the status quo, expand our current limitations and reimagine the way things are done.

From environmental liability to asset

Rocktron, led by BJ Lawson, has developed a patented, zero-waste process to remediate coal ash. Coal ash is a toxic by-product that requires large-scale waste storage and safeguarding to prevent threats to natural resources and public health. For lack of a better solution, most coal ash is buried in coal pits, which create the risk of groundwater contamination. Following a growing realization of coal ash management's impact on environmental health, BJ began exploring technologies and companies engaged in transforming coal ash waste into a valuable product.

He is now leading Rocktron, a company with a process to remediate coal ash and help reduce costs for power producers, while seeking to eliminate the significant environmental liability posed by fly ash.

Rocktron utilizes fly ash as a "raw material" and transforms it into glass and metallic beads called Eco-Mineral fillers. These fillers can be sold in a wide range of high-tech industries, including plastics, rubber and coatings manufacturing. Rocktron's believes that these fillers can outperform existing fillers by make their product lighter, stronger and cheaper to produce.

Through the Innovators Program, Rocktron is learning to articulate the company's value proposition and how to demonstrate that the company's product is a fit for the market.

From scarcity to abundance

On a cold, winter day, Dipak Mahato developed the concept for **SeaChange** while watching billowing clouds of mist from ultrasonic humidifiers and realizing there may be an opportunity to develop an aerosol-based water purification system. His thesis was if water could be broken into tiny aerosol droplets, it would be easier to purify.

Existing desalination technologies that remove salt and other minerals from water are expensive and energy intensive, mostly because of the infrastructure and energy

required to force massive amounts of water through permeable membranes. This process also creates a highly concentrated waste byproduct called brine, which presents its own environmental concerns. SeaChange has developed a patent-pending process that takes a different approach to desalination and offers advantages to existing technologies.

SeaChange is developing a non-thermal, non-membrane, zero-liquid discharge desalination system. The result is a system that seeks to reduce energy requirements, eliminate the production of brine waste byproduct and lower capital and operating costs. The technology can further be applied to various industries including oil and gas production, small-scale supply and municipal supply systems.

On his participation in the Innovators Program, Dipak states "the next few months will be huge for SeaChange. We need to build relationships with customers, investors, and partners and get them to the next level. I need help to make this transition." SeaChange recently won the water section of the SXSW Eco Startup Showcase and was selected as finalists for the NC IDEA grant program.

From waste to efficiency

Bob Farinelli's inspiration to disrupt the farming industry came from an interaction with one of his former customers at ELAN, a home automation company, "Son, do you see all those well pumps out there? I want to control them from this iPhone app so I never have to leave my pool deck." Since his time at ELAN, Bob and the **Smart Farm** team have focused on solving the problem of water scarcity and rising water costs by distributing the optimal amount of water to crops by using a reliable wireless irrigation system.

The scarcity of freshwater greatly impacts the agriculture industry. The threats of a growing population and a limited water supply are putting farmers under pressure to produce more food and use less energy and water in the process. Regulatory requirements targeting water use and rising water costs present a significant challenge to farmers.

Smart Farm's proprietary monitoring and control system is designed to automate field-based equipment, such as irrigation pumps, to optimize farming operations. The system provides remote, real-time control and visibility of field conditions that affect crop performance. As a result, more efficient irrigation and optimized operations can help farmers increase yield and decrease costs.

These clean technology companies offer opportunities to build businesses, while developing solutions to environmental challenges and creating value for their customers. These businesses offer compelling alternatives to the status quo and have the potential to effect industry-wide change. We support these companies not only for their positive impact on the environment, but also for their potential to be successful business ventures.

This post was authored by the Cherokee team with assistance from the featured teams. For more information on the Innovators Program, please visit: <http://citrixstartupaccelerator.com/raleigh/>.