

VANTIQ

Case Study

"We need things up all the time in the field, plants grow 24 hours a day. We need to respond quickly and Vantiq allows us to have real-time response."

Bill Kounty | Director of Technical Staff

Quick Facts

- ▶ 4 hour response time to locate and repair malfunctioning units as compared to multiple days previously
- ▶ 40% reduction in water usage
- ▶ 1,000+ acre monitoring capabilities
- ▶ 5% reduction in green house gas emissions
- ▶ Less than 1 week of development time, down from a projected several months

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Vantiq Case Studies at

www.vantiq.com/case-studies/



With Vantiq, WaterBit was able to make a next-generation water delivery and management solution. Being able to scale up to thousand-acre plots and hundreds of IoT enabled sensors means that Waterbit is now able to work with large scale farms to improve their water usage.

THE CHALLENGE

Real-time monitoring and edge computing technologies are now used in almost every industry. But one of the world's most important sectors has lagged behind when it comes to technology adoption, the agricultural industry.

In 2015, WaterBit set out to "help growers be good stewards of the land through smart agriculture" by developing a monitoring solution that measures soil moisture and executes irrigation remotely with a level of accuracy that has not been possible before. Farms equipped with WaterBit's technology, have higher crop quality/yields, lower disease rates, reduced soil erosion, and spend less money on water due to optimal delivery methods.

WaterBit began by developing their own in-house system to power their network of smart sensors; but quickly realized that their solution did not have the flexible architecture necessary to quickly setup new rules and track/act on multiple pieces of data at once. Having the agility to quickly and easily respond to development needs was crucial to WaterBit's success.

THE SOLUTION

To solve this problem, **Vantiq's real-time event-driven application development platform** was chosen by WaterBit to build their system architecture. Vantiq solved WaterBit's development problems by allowing them to build their application with the following characteristics:



Low-Code Development Tools

One of the main problems that Vantiq solved for WaterBit was giving them more agility and freedom when making updates and fixes to their product. Before using Vantiq, every time an update to the system was required it would mean many hours (or even days) of developer time. By moving to a low-code development approach WaterBit is now able to roll out new features at a much faster rate.



Distributed System Architecture

With the vast number of smart sensors spread across multiple farming operations, building their service on a platform with distributed capabilities was paramount to WaterBit's success. Imagine having to go into the field and update every sensor individually when new firmware is available. With Vantiq, WaterBit is able to make changes and updates to their smart sensors from the comfort of their headquarters; with the push of a button their smart sensor network is updated.



Built on a modern reactive architecture, Vantiq is an agile development platform to build scalable, distributed, real-time applications. Founded in 2015 by Silicon Valley legends, Vantiq provides maximum agility for businesses to drive operational innovation and accelerate real-time business awareness. Learn More at www.vantiq.com



Real-Time IoT Sensors

Plants don't miraculously stop needing water or growing to wait for you to look at your data and make a decision after the fact. In order to achieve the highest crop yield and quality for their clients WaterBit needed their sensors to act and react in real time. A drop in water pressure that goes unnoticed could spell disaster for a farmer's crops and coincidentally their livelihood. Because of this, WaterBit knew they needed to ensure they had real-time monitoring and reporting capabilities for their smart sensor network. Developing on Vantiq was the logical choice.

"Vantiq allows us to look at large sets of continuous streaming data and pick out key events that we want to detect."

Leif Chastaine | Co-FoUnder & COO

THE RESULT

By using Vantiq to develop their application, WaterBit was able to have a solution that mirrored what they had previously built (with all of the functionality stated above) in less than seven days. This had previously taken them several months to get to the same spot in the development cycle.

WaterBit and their customers are now able to receive notifications of equipment and crop status in real time.

Faster diagnosis and repair of malfunctioning equipment

Downtime for sensors can mean the difference between a record yield and losing the entire crop. By developing on Vantiq, WaterBit is able to immediately see when and where a sensor has gone down and send a crew to fix it.

Real-time monitoring of soil moisture increases crop quality & yield

Different crops have different moisture requirements. Allowing farmers to set the optimal moisture levels for different crops leads to better harvests.

Reduced environmental impact

So much of the water we use is wasted, by monitoring and controlling the flow of water we can decrease water usage and its negative environmental effects such as soil erosion, crop disease, and energy use.