

Valley Queen

SeQent Provides a Plant Floor Messaging and Communication Solution That Reduces Downtime

CASE STUDY



Milbank, South Dakota - Founded in 1929 by Swiss immigrants Alfred Nef and Alfred Gozenbach, Valley Queen is a dairy manufacturer in Milbank, SD. Valley Queen can produce 200 million pounds of cheese from 2 billion pounds of milk annually into a variety of natural cheeses, dried lactose, WPC80, and anhydrous milk fat, which are marketed and utilized by private label and nationally branded food companies. As one of the largest cheese producers in South Dakota and the largest employer in Milbank, Valley Queen procures milk from roughly 40 area farms, which enables the production of 500,000 pounds of cheese per day.

In 2018, the company announced a \$52 million expansion plan to increase processing capacity by 25% to over 5 million pounds of milk per day. The expansion project took place within Valley Queen's existing footprint at the Milbank facility. By upgrading capital equipment and infrastructure, Valley Queen can maximize the efficiency of the existing operating systems as well as fund new technologies.

As part of this investment, the company hired more than 25 additional employees to handle the increase in manufacturing capacity and currently has more than 300 associates.

Collaboration with Strategic Partners Rockwell Automation and Motorola Solutions

In 2017, several Valley Queen Automation and IT Staff attended the Automation Fair® event by Rockwell Automation looking for an innovative communication solution that would maximize their investment in Rockwell Automation hardware and software. After attending numerous technical sessions, including the joint presentation by Rockwell Automation Encompass™ Product Partners SeQent and Motorola Solutions, Valley Queen invested in SeQent, which has allowed them to transform their plant floor communication process. By leveraging the SeQent notification platform, Valley Queen was able to implement a software bridge from their Rockwell Automation HMI/SCADA environment and Motorola Solutions MOTOTRBO™ two-way radios.

Customer Details

Valley Queen is a dairy manufacturer in Milbank, SD.

Industry

Food & Beverage

SeQent Solution

- FirstPAGE
- FirstPAGE Link for MOTOTRBO™ MNIS
- FirstPAGE Alarm Manager
- FirstPAGE Alarm Manager Gateway for FactoryTalk® View SE HMI & Alarms and Events
- Sync Server

Partner Solution

- Rockwell Automation FactoryTalk® View SE HMI & Alarms & Events
- Motorola Solutions MOTOTRBO™ Capacity Plus
- XPR-7550e Subscriber Radios

Challenges

- Inefficient Processes
- Unplanned Downtime
- Preventable Incidents
- Communication

Results

- Improved Decision Making
- Increased Production
- Increased Quality
- Increased Profitability

THE CHALLENGE

As Valley Queen invested in their expansion, the need for efficient processes and effective communication became clear. Before SeQent, control room operators would view HMI screens from FactoryTalk® View SE HMI and manually contact maintenance and operations via PTT on their Motorola analog two-way radios whenever an alarm occurred. The procedure of manually processing data was not only inefficient; it resulted in unresolved alarms and unplanned downtime, which negatively impacted overall production.

THE SOLUTION

Following Automation Fair, SeQent was contacted by their Rockwell Automation authorized distributor, Border States Electric, to architect a solution for Valley Queen. At the same time, Valley Queen worked with their Motorola Solutions dealer, Electronic Engineering, to upgrade their radio system from conventional analog to a single site digital trunking Capacity Plus system. After seeing the value of the SeQent solution for building a bridge from their existing FactoryTalk® View SE HMI environment and an upgraded Motorola MOTOTRBO™ radio system, Valley Queen allocated Capital for SeQent Software in early 2018. Electronic Engineering installed and continues to support the new Capacity Plus trunking system and programmed the repeaters and new XPR 7550e subscriber radios to receive automated text messages.

PHASE 1

Utilizing a centralized architecture for the deployment of the SeQent Software enabled Valley Queen to implement one instance of the core notification server software, despite having multiple HMI servers with alarms requiring dispatch. SeQent provided their Industrial Automated Messaging and Alarm Notification Software product lines FirstPAGE and FirstPAGE Alarm Manager (see figure 1). SeQent installed the FirstPAGE Alarm Manager Gateway for FactoryTalk® View SE HMI on each primary HMI Server, which provided Valley Queen with the ability to bridge Alarms requiring dispatch into the single instance of the Alarm management software. A copy of the Gateway was also installed on each secondary HMI server to support FactoryTalk® redundancy; this ensured that alarms would still be communicated in the event of a failure.

SeQent professional services initially deployed a train-the-trainer program, and then on their own Valley Queen was able to, with the click of one button, browse to any HMI Alarm and configure it to notify a Motorola XPR 7550e radio when required. The radio communication application installed was the FirstPAGE Link for MOTOTRBO™, this application gave Valley Queen the ability to discreetly notify any individual radio of an alarm condition as part of their MOTOTRBO™ Capacity Plus system. Communication occurred from the Link application over a network connection to the radio MOTOTRBO™ Master Repeater, this provided Valley Queen with a robust data notification solution capable of sending messages to multiple destinations at one time.

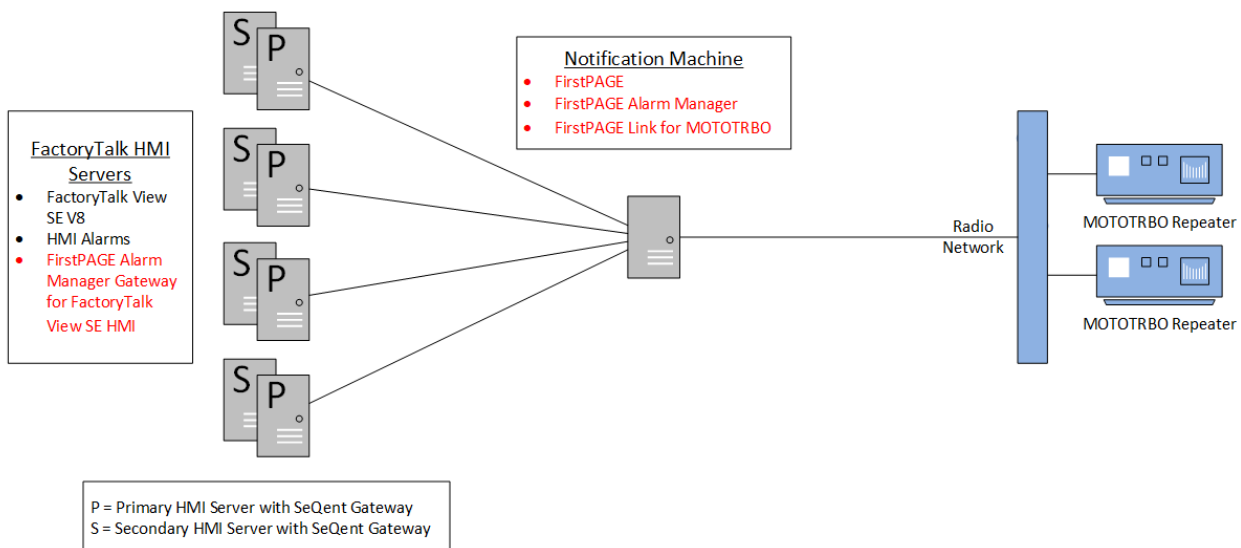


Figure 1: Valley Queen—SeQent Notification Software Architecture HMI Environment

PHASE 2- SYSTEM UPGRADE

In early 2020, working with a Rockwell Automation System Integrator, Cybertrol Engineering, Valley Queen embarked upon a major HMI/SCADA upgrade to FactoryTalk® View SE Alarms & Events (see figure 2). SeQent provided an upgrade path to support the upgrade from FactoryTalk® View SE version 8 to version 11, which required conversion from HMI Alarms to A&E Alarms.

SeQent replaced the FirstPAGE Alarm Manager Gateway for FactoryTalk® View SE HMI with the FirstPAGE Alarm Manager Gateway for FactoryTalk® View SE Alarms & Events. Unlike the HMI environment, only one instance of the Gateway was required to access the Alarms due to the nature of an A&E environment.

To support Valley Queen's redundant environment, SeQent updated the architecture to include the installation of a second instance of FirstPAGE, FirstPAGE Alarm Manager, and Gateway for FactoryTalk® View SE A&E to be fully fault-tolerant. FirstPAGE Alarm Manager provided Valley Queen with an Import/Export Utility tool that enabled efficient migration of alarms out of the initial configuration (HMI Alarms) into the new configuration (A&E Alarms). Furthermore, SeQent provided an application called Sync Server, which automatically synchronizes the configuration from the primary instance to the secondary instance, removing the need to maintain two environments.

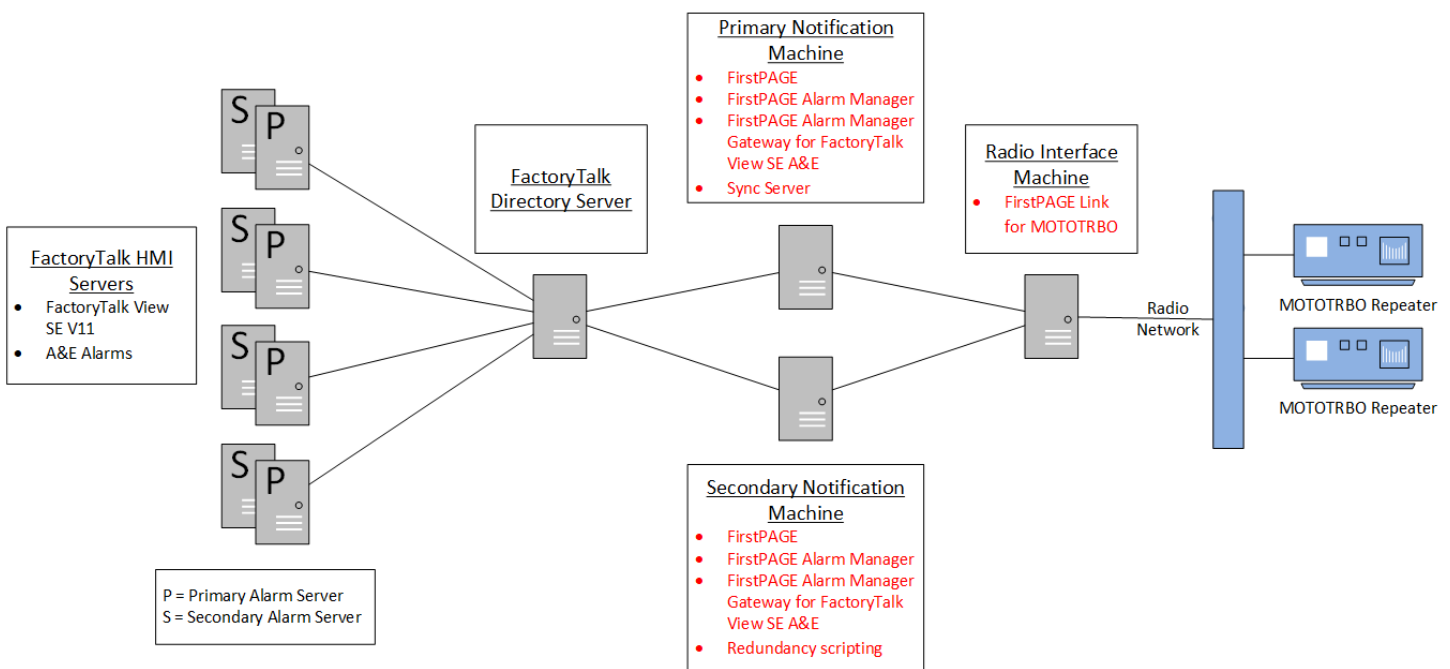


Figure 2: Valley Queen— SeQent Notification Software Architecture Alarms & Events Environment

"We met SeQent at the 2017 Automation Fair by Rockwell Automation in Houston. With assistance from our Rockwell Automation authorized distributor Border States Electric and our Motorola Solutions dealer Electronic Engineering, a formal introduction was made, and we successfully installed a turnkey solution that built a software bridge between our FactoryTalk® View SE HMI environment and our Motorola Capacity Plus two-way radio system. This solution has transformed our plant floor communication process, and SeQent has demonstrated a willingness to take Voice of Customer (VoC) requests and make the appropriate changes. For instance, we met with them at the 2018 Rockwell TechED event in San Diego, and within a couple of months, our enhancement request was delivered, and the system is functioning as promised and expected."

- Mark Lee, Automation Lead Technician



THE RESULTS

By implementing SeQent Software, Valley Queen transformed their plant floor communication and improved overall efficiency. Our strategic partnership with Rockwell Automation and Motorola Solutions has provided Valley Queen with a reliable manufacturing software solution that will support future growth.

Without having to process data manually, alarms are sent automatically to a variety of communication devices, allowing operators to resolve issues in real-time without compromising production or product quality.

"With SeQent, we are able to have alarms sent to Motorola MOTOTRBO™ radios, email inboxes and as text messages. We are fortunate to have such a reliable resource to help keep our plant running smoothly day in and day out. For instance: we have an alarm that notifies us if a cheese vat has a failed agitator. This alarm shows on our HMI system, but thanks to SeQent, we can also send the alarm to our Motorola MOTOTRBO™ radios and email inboxes, so we know instantly if an issue arises. We had this happen recently. The alarm went to our radios, and within one minute, we had technicians in the room resetting the drive to save our product, and we did not compromise the quality of the cheese" - Mark Lee, Automation Lead Technician.



With real-time notifications and insight into their operations, Valley Queen can prevent costly incidents such as plant shutdowns and product waste. They have been able to improve alarm response time, increase employee safety and productivity by ensuring notifications get sent to the right people at the right time with their fully redundant environment.

"Another example of the value of SeQent software is when our main boiler tripped out when none of our technicians were near the boiler room. They received the SeQent alarm on their radio and were able to be in the boiler room within minutes of getting the alarm. This allowed them to maintain steam pressure in the plant to avoid a costly shutdown and waste of product. Utilizing SeQent with our Rockwell Automation HMI alarm tags is a great tool that we use 24/7 to keep things running smoothly" - Mark Lee, Automation Lead Technician.

SeQent provided Valley Queen with an innovative and cost-effective solution that offered fast installation and implementation and produced immediate improvements through a user-friendly platform. This has allowed Valley Queen to maximize the return on their investment and experience the value of our software with improved decision making and increased productivity, profitability, and quality.

Aside from the successes and results mentioned, this project is a testimonial for the power and value of the Rockwell Automation PartnerNetwork™ program that included an Authorized Distributor, two (2) Encompass Product Partners and a System Integrator Partner.

Explore the Power of Real-Time Decision Solutions by SeQent, visit our website www.SeQent.com or email Sales@SeQent.com.

ABOUT SEQENT

SeQent is a leading industrial automation software provider and early pioneer in the Industrial Internet of Things (IIoT) with over twenty years of experience and thousands of installations worldwide. Our Alarm Notification Software, Andon-Visual Display Management, Industrial Automated Messaging, and Industrial Wi-Fi SMS Messaging solutions provide a bridge between industrial automation systems and communication devices.