

New Belgium Brewing Company

www.newbelgium.com



“From an administrative perspective, we save a lot of time. From a user’s perspective, we minimize frustration. That’s the number one benefit.”

Igor Valuyev
Chief Electrical and
Automation Engineer

Brewery with Progressive Reputation Makes the Most of Wonderware Software

Goals

- Install an Enterprise Manufacturing Intelligence and Manufacturing Execution System that will improve inventory management, increase production accuracy and improve quality control.

Challenges

- Reduce time spent entering data and manually checking the movement of materials
- The PLC-based batching system was not operating at its full potential
- The clean-in-place (CIP) information was not readily accessible
- Quality control procedures were performed by hand

Wonderware Solution

- Wonderware System Platform
- InTouch® HMI
- Wonderware Historian
- ActiveFactory® Trending, Analysis and Reporting Software
- Production Event Module

Results

- “Track and trace” capability enables tracking of any product within 30 minutes.
- Key Performance Indicator (KPI) scorecards provide immediate information about performance
- Historical analysis enables optimization of energy use
- Faster trouble shooting; improved response times for corrections
- Early detection of product deviations
- Projected ROI for integration costs will be realized within two years



Software Solutions for Real-Time SuccessSM



Fort Collins, Colorado

– While many manufacturers today work to minimize their impact on the environment and meet green goals, few have been applying these practices for as long as the New Belgium

Brewing Company. In addition

to long-standing programs to reduce, reuse and recycle, in 1998 the company became the first wind-powered brewery in the United States. Sustainability and utilizing innovative technologies are among the company's core values.

This tradition of progressive thinking extends itself into New Belgium Brewing Company's manufacturing processes, but it did not start that way. In the beginning, Jeff Lebesch, inspired by the Belgium beers he tasted on vacation, began brewing beer in his basement. Soon after, friends and neighbors urged Jeff and his wife Kim to take their operation commercial. That was 1991, and the small company tracked most of its information on paper and with internally-developed databases.

Early Success Brews Frustration

It wasn't long before the popularity of beers like Fat Tire spurred New Belgium Brewing Company's growth. With reporting and compliance requirements increasing, the company found it difficult, time-consuming and sometimes even impossible to gather all of the production-related data they needed to generate reports using their early systems.

Operators were frustrated by the large amount of time spent entering data and manually checking it again and again to track the movement of materials through the manufacturing process. The PLC-based batching system was not operating at its full potential and clean-in-place (CIP) information

was not readily accessible. Quality control was performed by hand, slowing down an operation where the excellence of the product is the basis of the brand and can't be compromised.

Igor Valuyev, Chief Electrical and Automation Engineer, explains, "Operators used to do double entry, which is double work. I'd say a lot of operators spent 30% of their time updating the paper."

There was no doubt that New Belgium Brewing Company needed better processes to trace each batch of beer through the manufacturing process. Management wanted to increase accuracy, decrease time for data input and reliance on paper documents, and reduce the time required to access and analyze information. The company was also looking for ways to improve inventory management and training. And the new system would have to be easier to use for both operators and management.

A Plan for Innovation and Improvement

The brewery contacted Orbis Information Systems of Dublin, Ireland – a Wonderware System Integrator with food and beverage industry experience – and shared this lengthy list of requirements. New Belgium requested their help to configure a system that would enable smoother, automated collection of data as well as more in-depth analysis and understanding of it. Additionally, the brewer hoped to see improvements in energy efficiency, quality assurance and throughput.

Besides meeting these parameters, it was also important for the new Manufacturing Execution System (MES) to match New Belgium Brewing Company's culture. The system's scope is plant-wide – fulfilling New Belgium Brewery's "grain to bottle" quality-control requirements and providing valuable decision-making data from the arrival of raw materials through the bottling and shipping of the finished product.

Better Visibility Brings Increased Efficiency and Quality

The new system using Wonderware software provides extensive “track and trace” capability and is a natural fit with New Belgium’s conservation and performance goals. With the new solution, any bottle or tank of beer can be tracked back to all of its inputs – finding 100% of them within 30 minutes. It uses Key Performance Indicator (KPI) scorecards to provide immediate information about how each shift is performing as well as how the plant is doing on a monthly or yearly basis. This real-time visibility is critical because it enables operators to devote their resources to solving the right problems.

In addition to providing more reliable and timely data, the system also aids in enhanced analysis, which has led to increased quality control. Product deviations are caught much earlier, trouble shooting is faster and response times for corrections have improved. Control charts are used to predict the longer-term outcome of process changes. In a business where there is no scrap – low-quality product literally goes down the drain – Wonderware software is helping to make a significant difference in product consistency.

“We are striving for quality and part of the quality is being able to make intelligent decisions. I would say that quality has increased.” – Igor Valuyev

Additional Operations Benefits

Once tracked 100% by hand, vital stats such as temperature and pressure measurements were difficult to gather, hard to support and not easily analyzed. But not anymore. Today, New Belgium Brewery’s system employs Wonderware Historian software to collect and store real-time and historical production data.

Plus Wonderware InTouch Human Machine Interface (HMI) software with its intuitive graphical interface makes running the plant easier than ever before.

Wonderware ActiveFactory software also plays a key role. Because of its versatility, it is found throughout New Belgium Brewery Company’s operation: production departments use it to analyze and optimize energy use. Maintenance Personnel use it to determine temperatures in the rooms, facilities usage and cleaning requirements. Even the accountants employ ActiveFactory to extract batch data and alcohol content readings to meet Alcohol, Tobacco and Firearms Department reporting and taxation requirements.

Beer brewing is an energy-intensive process, and with the Wonderware system, energy conservation has improved too. Steam, water and electricity consumption is monitored continuously. The plant’s lighting system is automated; when no one is present, light sensors automatically dim the lights or turn off unneeded banks of lights.

Bottom Line, It’s a Great Relationship

With any new implementation, there are challenges along the way. And Wonderware has supported New Belgium Brewing Company throughout the entire project. Valuyev says, “I have used Wonderware for many years, and in my opinion they have the best technical support system in the world. People are prompt and people get back to you.” Wonderware knows that this kind of response builds strong relationships.

As for return on investment, Valuyev speculates that ROI will come within two years for the combined software and integration costs. Which works well for a company that prides itself on environmental best practices and progressive use of technology, all while delivering a high-quality product and operating profitably.





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Wonderware • 26561 Rancho Parkway South, Lake Forest, CA 92630 • Tel: (949) 727-3200 • Fax: (949) 727-3270 • www.wonderware.com

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