AVEVA

Pepsi Bottling Plant Decreases Downtime and Improves Quality

Pepsi Bottling Ventures of Garner, North Carolina - www.pepsibottlingventures.com
Industry - Food & Beverage

Goals

- Develop a performance and downtime tracking system
- Eliminate guesswork and assumptions through collection of consistent and reliable data
- Justify Return On Investment for future capital plant projects
- Develop an enterprise level platform for future expansion

Challenges

- Implement the new system across 1 new line and 4 legacy lines in the plant
- Downtime data was recorded manually and information gathering was subjective and inconsistent
- Manually recorded data created more questions than answers
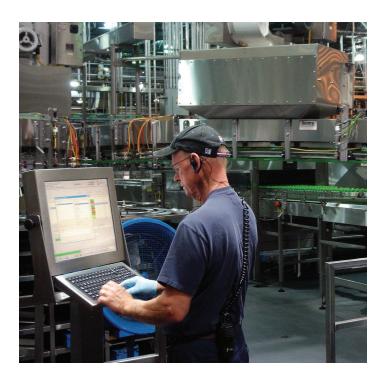
AVEVA Solution

- System Platform
- MES Performance
- InTouch HMI
- Historian Clients
- Historian

Results

- Produce over 30 million cases of Pepsi products a year
- PBV Garner has grown from producing and distributing 189 different products to over 500
- Total payback for investment estimated at 2.8 years
- Solution assists in achieving sustainability goals and helps reduce the plant's carbon footprint
- Process Visualisation immediately available to all levels of plant management and staff
- Ability to discover, validate and quantify opportunities for future capital investment
- Average Filler Runtime data facilitated increased production numbers

Garner, North Carolina – Quantity and quality go hand in hand at Pepsi Bottling Ventures (PBV). Over 30 million cases of Pepsi products a year are produced by PBV of Garner, N.C. That's a lot of product. And each bottle and can is as good as it can be. As recipient of Pepsico's coveted Plant of the Year award, PBV is recognised as the #1 Pepsi bottling plant in North America out of 116 plants across the country.

PBV has grown to become the third largest manufacturer and distributor of Pepsi-Cola products in North America, operating 27 bottling and distribution facilities in six states. PBV manufactures and distributes more than 100 different flavors and brands.

"We have to make the right decisions everyday because it has a huge impact on our bottom line. AVEVA's solutions help us make those decisions."

-

Scott Jamison
Vice President of Engineering, Pepsi Bottling Ventures

Growth, Quality and Challenges

Built in 2002, PBV Garner has grown from producing and distributing 189 different products to over 500 today. Flavor changes, bottle changes and secondary packaging changes are a daily occurrence. Being able to adapt to these changes requires a unique level of flexibility, attention to detail and access to production data.

The previous paper-based system relied exclusively on manually entered data. Depending on the operator's workload and ability to accurately measure machine performance, this data was subjective and inconsistent. Once this data was delivered to plant management, more often than not, the information created more questions than answers.

With four existing production lines in place, PBV added a new Direct Blow Fill (DBF) Line for the Aquafina and other non-carbonated products. This line not only fills the bottles with purified water, but it actually makes the bottles, as well. As production needs grew and technology progressed, PBV looked for a software solution to measure performance, downtime and Overall Equipment Effectiveness (OEE). The challenge was to find a solution that could work with both the legacy production lines and the new DBF line.

After a great deal of research and consideration of several different systems, PBV decided on a performance solution based on Wonderware by AVEVA. Wonderware's legendary flexibility was a powerful factor in the selection. The AVEVA solution enabled PBV's engineers to add functionality in-house, while also expanding and troubleshooting the system by their own internal staff.

Working with Wonderware Southeast, an AVEVA distributor, Barry-Wehmiller Design Group provided a detailed assessment of PBV's needs. The solution identified the detailed downtime causes from all of the major machine centers. PBV not only wanted to analyse data from the machine center level, but all the way to the line level.

By implementing an algorithm that allowed for the propagation of downtime codes from machine centers all the way to the line, the AVEVA solution proved to be a strong value proposition for PBV to accurately analyse their data and see what was really impacting critical production operations.

The solution – featuring System Platform powered by Wonderware, MES Performance, InTouch HMI powered by Wonderware, Historian powered by Wonderware and Historian Clients – was installed in all five lines of the Garner Plant.

Line Efficiency and Product Quality

PBV's wide range of products, with ongoing packaging and flavor changeovers, makes line efficiency a primary objective. Before the implementation of AVEVA solution throughout the plant, line efficiency was an evasive concept. Operators were never quite sure if they were ahead of or behind schedule. Therefore, the scheduling of changeovers was a guessing game.

Today, the data collected by AVEVA solution is driving line efficiencies. By pinpointing downtime, PBV can gain percentage points against efficiencies. By driving efficiencies up, costs are driven down. Overall production improvement across all five lines enables PBV to focus their resources on meeting and maintaining Pepsico's quality guidelines while ensuring that production goals are met on schedule.

Access to Accurate Data = Production Improvement

Just as important as accuracy of data is accessibility to data. Real-time production data is displayed throughout the plant, production office and even in the employee break room on large, flat-screen displays. PBV has found that workers are paying attention to what is happening on their lines, even while on breaks, and know whether they are ahead of schedule or behind. This motivates them to continually monitor their line efficiencies and make adjustments as necessary to meet their goals.

The AVEVA solution is used across all five lines in the facility to great success. On-going access to pertinent information enables plant personnel ;to analyse production data, make informed decisions and implement successful solutions.

By using Wonderware by AVEVA, PBV has been able to optimise employee performance by tailoring training based on hard data rather than subjective opinions. By improving machine operator performance, line mechanics now focus on overall line performance rather than machine or operator based issues.

Sustainability Goals are achieved through Performance with Purpose

MES Performance operating at PBV generates machine efficiency data on an on-going basis. With an eye toward sustainability, PBV utilises this data to minimise their impact on the environment and maximise the efficiency with which they use raw materials. Pepsico's "Performance with Purpose" program is focused on sustainability and striking a balance between environmental, economic and social concerns.

PBV recognises that good environmental practice is also good business: the fewer raw materials they use, the less waste they produce, the less electricity they use – the lower their costs. This makes for a healthier business model and a healthier planet.

Success for the Best

MES Performance provides an enterprise level software solution for collecting, tracking and communicating real-time equipment performance and efficiency information.

As PBV experiences the success of AVEVA's MES at the Garner, North Carolina facility, they'll be able to capitalise on this success and roll it out into their other plants across the country. Pepsi Bottling Ventures has realised higher efficiency based on AVEVA's advanced visualisation, easy-to-use interface and unbeatable real-time data collection. Success at this level is as sweet as the drinks they make.

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