

CUSTOMER CASE STUDY

Bottling Plant Decreases Downtime and Achieves Swift Payback with AVEVA

Pepsi Bottling Ventures of Idaho - www.pepsibottlingventures.com
Industry - Food & Beverage

Goals

- Improve changeover performance by accurately identifying constraints and bottlenecks
- Facilitate better decision making for cross-functional teams through consistent and reliable data which would eliminate guesswork and assumptions
- Understand payback metrics and use this data to justify future projects requiring capital investment

Challenges

- The new plant required the integration of new and legacy equipment
- Downtime data was recorded manually, and this tracking system did not include recently installed equipment
- A lean headcount meant that engineers' time was at a premium

Solution

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

Results

- Reports and trending capabilities of AVEVA software enabled cross-functional teams to review performance data in consistent, reliable and easily shared formats
- Cause of downtime in changeover process identified, leading to 50% reduction in changeover time and additional savings in raw materials and packaging
- Plant has achieved an overall 10% increase in line efficiency
- Total payback for investment took less than one year; annualized savings calculated at over \$78,500

Nampa, Idaho – In the consumer marketplace, constantly changing tastes drive innovation. This principle plays out – literally – in the beverage business, where offering a multitude of soft drink choices is a mainstay of growth and success.

Pepsi Bottling Ventures (PBV) manufactures and distributes more than 100 different flavors and brands. In 2009, Beverage Industry magazine named PBV its Bottler of the Year. The company has become the third largest manufacturer and distributor of Pepsi-Cola products in North America, operating 27 bottling and distribution facilities in six states.

In Idaho, PBV runs a state-of-the-art manufacturing and sales distribution plant in Nampa as well as three other distribution centers throughout the state. And even as a new member of the PBV family, joining in early 2009, this division has contributed to the company's award-winning operations with impressive performance and results.



“With more detailed data available from the PLCs in real-time, we are able to cost-justify upgrade projects specifically for certain machine centers. We’re able to prove the need for more capital investment.”

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Chris Bacon
Project Manager, Pepsi Bottling Ventures

Integrating the Present with the Future

The Nampa facility was built in 2005 and was equipped with a combination of new and legacy machinery. Blending these assets proved possible, but issues of waste and downtime were apparent.

Additionally, a homegrown data collection system that had been in place for the legacy assets did not take full advantage of the capabilities of the new equipment. Operators tracked downtime and recorded it manually during their shifts.

Relying on these clipboard notes sometimes led to inconsistent decision making and an inability to track trends accurately over time.

But PBV didn't accept this situation for long. They knew that better solutions were available. Their vision included a performance management and downtime tracking system that would connect all of the equipment, and that would also help them quantify return on investment and justify future plant upgrades.

Apex Manufacturing Solutions, a certified system integrator for Wonderware by AVEVA, worked with Wonderware PacWest to assist PVB in evaluating the possibilities. It became clear that Wonderware by AVEVA was the preferred solution when Apex Senior Project Manager Erik Phillips recommended it, and Chris Bacon, PBV Production Manager, confirmed prior positive experiences with the AVEVA solution.

The solution – featuring the System Platform powered by Wonderware, MES Performance, InTouch HMI powered by Wonderware, Historian powered by Wonderware and Historian Clients – was installed in September 2008, and commissioned and validated just one month later.

Concentrating on Changeovers

With such a wide variety of products, making smooth switches between formulations is central to the plant's productivity. Before the AVEVA solution was installed, engineers estimated that changeovers took 60 minutes. With the new system in place, the data showed actual time to switch between flavors averaged 90 minutes.

Realising that this degree of downtime was putting a damper on profitability, PBV used the AVEVA solution to identify the chief constraints and their root causes. Armed with this data, they determined that the most critical bottleneck was in the filler process. Correcting this issue improved changeovers by up to 45 minutes and resulted in additional savings in raw materials and packaging. Efficiency on the filler line increased by 10%.

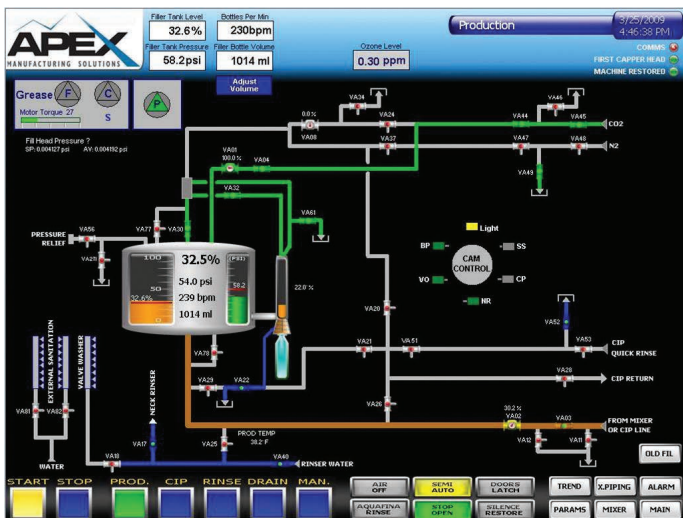


Teamwork for Continuous Improvement

Just as importantly, the Historian powered by Wonderware provides reports and trending tools that enable cross-functional teams to analyse plant operations consistently. Maintenance, operations and engineering staff members can depend on accurate, reliable data, which takes guesswork and assumptions out of the process.

PVB personnel share an overall view of operations with the InTouch HMI powered by Wonderware software. A graphical visualisation of the plant makes operational tasks intuitive and facilitates clear communications. It also makes the system easy for new operators to learn.

Like most manufacturing businesses, PBV maintains a lean headcount. So AVEVA software's object-based programming enables more work to be done by fewer engineers, speeding the development process and making it as efficient as possible. When a new asset or line is added, existing processes can be quickly and easily replicated thanks to AVEVA software's standardisation.



Calculating Payback

Understanding return on investment is important for PBV on a day-to-day basis, but even more valuable when it comes to planning for investments that will ensure the operation's continued success. Especially now, capital expenditures are scrutinised closely and those that cannot be justified for true ROI are in danger.

After seeing the improvements in the filler line performance, PBV used AVEVA software data to conduct an ROI analysis.

PBV will use this experience to sustain their Continuous Improvement process as well as to identify future opportunities to invest in capital improvements that can be justified based on ROI.

	Projected	Actual
Investment	\$85,000	\$76,219
Annualized Payback	\$67,334	\$78,548
Payback time	1.25 years	0.97 years

* Includes additional savings in raw materials and packaging resulting from more efficient changeovers.

The Best Solution

Just like consumers selecting a soft drink, PBV had a number of choices to consider for its new manufacturing performance system. Appealing qualities such as superior data collection and analysis capabilities, easy-to-understand HMI visualisation and efficient programming helped the bottler choose AVEVA software. And like a refreshing Pepsi, adding AVEVA software to the PBV Nampa operation provided immediate positive results. But it will also contribute to long-lasting performance improvements and verifiable returns on investment.

