CUSTOMER CASE STUDY

The perfect fill: AVEVA™ PI System™ puts Abbott Nutrition in control of complex processes

Abbott Nutrition - www.abbottnutrition.com
Industry - Food, beverage and consumer packaged goods

Goals

- Improve real-time process monitoring and control
- Increase yield by reducing scrap and overfilling
- Reduce product variability and increase batch cycle times

Challenges

- Data collection spread across multiple tools and systems
- High degree of variability from product to product
- Production decisions were not data-driven

Results

- Increased OEE by two percent
- Increased filling speed by ten percent
- Created a model that can be implemented across the organization

Abbott Nutrition, a division of the global healthcare company Abbott, manufactures products for household names like Pedialyte, Ensure, and ZonePerfect. The company began using AVEVA PI System in 1999, and the solution is now in place across all its production facilities.

In 2018, the company launched an initiative at its Granada, Spain production facility to determine how AVEVA PI System could help extract more value from manufacturing data and turn that valuable information into data-driven process control.

Turning data into action

The first step was to work closely with the company's quality assurance department to identify critical process parameters and critical quality attributes. The facility was already collecting data for weight, temperature of the filling machine jaws, oxygen levels, bulk density, flowability, moisture, and leak detection. However, these were collected in different tools; in order to transform this data into actionable information, Abbott needed to collate, present and contextualize data for machine operators.

Once the process parameters were established, engineers at the Granada facility created dashboards to monitor the status of filling machines and the various stages of the filling process in real time. Green areas of the screens now indicate when the process is within designated parameters. Red areas indicate a process anomaly, and operators and managers can drill down for more detail. Drill-down screens allow floor managers to do root- cause analysis to figure out what is going on with a particular machine.

"We had a lot of data and information but in the end, we weren't using that data and information to make decisions."

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Julio López Ortega
Senior Engineer, Process Monitoring & Control, Abbott Nutrition

The perfect fill every time

AVEVA PI System's visualization screens and advanced data analysis have allowed the Granada plant to get their process parameters under control. The insights gained from data have reduced product variability and the amount of product wasted because of overfills or other production errors.

Making these process changes also pushed Abbott Nutrition to move away from paper-based data collection and move its recordkeeping to a central system that's accessible across the organization.

The Granada facility also minimized the need for destructive product testing and reduced the demand for raw material and packaging material by decreasing leak events and shortening cycle times. These measures have led to increased product yields and lower costs. "We now have the opportunity to increase the speed of the filler by more than ten percent," Ortega said. The plant has also improved OEE by two percent, "which is very good," Ortega explained, "because OEE is something very difficult to increase."

"This type of visualization is very close to the machines the operators use. It's very intuitive."

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José Miguel Gutiérrez Guerrero
Operation Technician, Abbott Nutrition

Abbott Nutrition uses AVEVA PI System to drill down into critical process parameters and do root cause analysis when problems arise on its production floor.

Looking forward, Abbott hopes to expand its use of AVEVA PI System and use the same process control tools in other plants. “Because we are using [AVEVA PI System] standard tools, the replication will be very easy,” Guerrero said.

The goal is to create a global infrastructure, based around AVEVA PI System, that uses the same architecture and visualizations across the company’s facilities around the world.

“We now have the opportunity to increase the speed of the filler by more than ten percent.”

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For more about Abbott and AVEVA PI System, watch the full presentation here