

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."

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."

José Miguel Gutiérrez Guerrero Operation Technician, Abbott Nutrition



	HOME			CAN Filler Line 4	CAN Filler Line 5	Dryer I	Dryer II
						PMC Dashboard Control Process Parameters Flexible Fille	
	Work Order Information	Filler CPPs		Status		Recipe Parameters	
	93264QU	FBH Jaw Temperature	In Control		n Control	300 m/s2	425 m/s2 4,7329 re Auger Decelaration Auger Turns
	SIMILAC TOTAL CO Batch	FTH Jaw Temperature	In Control		n Control	51 ms	Auger Decelaration Auger runs
	Total Comfort Family 100S848832133	RBH Jaw Temperature	In Control		Start	Auger Fill Time 0 ms Drop Time	250 ms Cooling Time 400 ms Sealing Time
	Product Powder Info	RTH Jaw Temperature	In Control	Pre-Hopper		339,5 g	360,5 g 350 g CHW Upp Limit Weight Target
		Vertical Jaw Temperature	In Control	O2 Level	In Control	9,1733	100 % 38
		O2 Lances Level	In Control	SpeeDee-Hopp	er	Weight StdDev	Jaw Closing Recipe No
				O2 Level	In Control	Feedback Che	ckweigher
		Production		Critical Quality	Parameter	45 Adjust Less Grain	65 Adjust More Grain Ready
	Flexible Features	12 35	n Total Units	NDT Diferential Pressu	ure In Control	6 Inhibit	Adjusting REvs Up FeedBack Status
	Gusset	Double Bag Double Iter 293 62	355	InfinityQS	Scope	Data Flow	eeuback Status
	Style	Under Count Over Count			0 	OPC Enabled	4 Intf Shutdown Primary PI ICU
	265 mm Bag Length 350 g Format 350,15 Average Weight	Tarde		Checkweigher		OPC Error OPrimary PHCU PTI Enabled No Data	
				Every Weight	In Control	PTI Error	Secundary PI ICU 🔴
				0			

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.

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

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

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



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