CUSTOMER CASE STUDY

AVEVA™ PI System™ sweetens the production process at Illovo Sugar Africa

Illovo Sugar Africa - www.illovosugarafrica.com
Industry - Food and beverage

Goal

- Create a real-time reporting system to track the performance of 49 packing machines across five sites in three countries.

Challenge

- Variance in form fill and seal packing machines led to inconsistent product weights.

Solutions

- AVEVA PI System
- AVEVA™ PI DataLink™
- AVEVA™ PI Vision™

Results

- 50% improvement in performance
- 25% improvement in availability
- 30% improvement in OEE in three months

Illovo Sugar Africa produces a wide range of products, from industrial sugars to prepacked sugar for direct consumption around the world. Form fill and seal (FFS) machines fill consumer stock units, and operational productivity hinges on minimizing the downtime of these machines and reducing variability in product packaging. FFS machines are complex and at high risk for malfunctions that result in costly downtime. Before implementing AVEVA PI System, Illovo had little reliable data about what went wrong in the machines. AVEVA PI System helped the company understand what was going wrong and improve overall equipment effectiveness in just a few short months.

One size does not fit all

Illovo's business strategy involved pivoting from bulk production to smaller SKUs that are packaged for direct consumption. SKUs come in myriad shapes and sizes, but they're all produced using the same FFS machines. To make this SKU-focused strategy work, the machines needed to perform consistently with little downtime and few malfunctions.

Before implementing AVEVA PI System, Illovo relied on shift log sheets to provide insight into FFS machine performance instead of hard data coming from the machines themselves. The company needed a cost-effective and simple reporting system that would collect downtime reports hourly, daily, and weekly.

It also wanted graphical representations of common predefined downtime causes and customizable Excel reports with access to historical data. AVEVA PI System turned out to be just that solution.

Finding the ghost in the machine

Illovo began a pilot program with AVEVA PI System, spanning 49 FFS machines at five sites across three countries. Even though Illovo has a large number of machines, asset framework templates in AVEVA™ PI Server made configuring the data hierarchy simple and straightforward. Illovo easily captured variables such as bags-per-minute, shifts, and downtime-reason codes.

The asset framework also provided the company's core overall equipment effectiveness (OEE) analytics: availability, performance, and quality. These templates were not only simple and effective but also crucial to the success of the overall solution.

> "Those templates ensure that common changes can be cascaded through a number of elements – 49 of them, in this case – very quickly."
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> **Lloyd Melrose**
> Group Control and Instrumentation Engineer, Illovo Sugar Africa

Using the asset framework and AVEVA PI DataLink, Illovo generated customizable reports for predefined periods using event frames in AVEVA PI Server, analyzing the data not only by machine, but also by shift or downtime event.

These reports helped the team isolate both human and machine performance issues and trends so they could be addressed and improved. "I think this is a good example of turning raw data into actionable information," said Melrose. Adding AVEVA PI Vision into the mix made the new data even easier to process. Each machine had its own AVEVA PI Vision dashboard with the relevant information laid out intuitively and with simple symbols to make the system easy for operations personnel at every level to use.

> "Asset optimization is possible at minimal cost with basic technical skill using AVEVA PI System infrastructure."
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> **Lloyd Melrose**
> Group Control and Instrumentation Engineer, Illovo Sugar Africa

Illovo Sugar Africa uses PI Vision dashboards to see the real-time performance of 49 FFS machines across five sites in three countries.

The sweet smell of success

AVEVA PI System immediately provided contextualized information for tracking performance on each machine, which allowed Illovo's team to focus on more efficiently troubleshooting and correcting problems to improve operational efficiency. The information received from AVEVA PI System was based on asset data instead of employee intuition.

"As a result of the information being accurate and contextualized, and given to the right people at the right time, [AVEVA PI System] enabled improvement to happen really quickly,"

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Lloyd Melrose

Group Control and Instrumentation Engineer, Illovo Sugar Africa

"Quickly" is an understatement—within three months, overall equipment effectiveness for the FFS packing machines rose 30%, with performance up 50% and availability up 25%. By implementing simple, cost-effective data management systems, Illovo harnessed the power of its operations data and streamlined its packaging procedures.

Melrose summed up the value of AVEVA PI System: "It's just an indication of what can happen with the right focus in the right areas with the right information." Going forward, Illovo plans to expand the use of AVEVA PI System to bring the benefits seen on FFS machines to other areas of its manufacturing operation.

For more information about AVEVA PI System, please visit: aveva.com/en/products/aveva-pi-system