



RAPID OPTIMIZATION WITH AFFORDABLE DATA SOLUTIONS FOR ILLOVO SUGAR AFRICA

Illovo Sugar Africa – a discrete manufacturer of sugar, headquartered in South Africa – produces a wide range of products from industrial sugars to prepacked sugar for direct consumption in domestic markets. Form Fill and Seal (FFS) Machines fill consumer stock units, and operational productivity hinges on minimizing the downtime of these machines as well as the risk of recalls from variability in product packaging. Unfortunately, FFS Machines have typically had a high probability of downtime and variability. With very little reliable, repeatable data at Illovo’s fingertips, there was no way to target and improve overall equipment effectiveness (OEE).

DATA UNCOVERS THE GHOST IN THE MACHINE

Illovo was looking to expand their customer base and change their stock-keeping strategy, and improving the performance of the FFS Machines was vital to their success. The company was relying on shift log sheets to provide insight into the performance of these machines, instead of hard data. They needed a cost-effective and simple reporting system that would collect downtime reports on an hourly, shift, daily, and weekly basis, with graphical representations of common predefined downtime causes, and customizable Excel reports with access to historical data.

Illovo began a pilot program with the PI System, spanning 49 machines at 5 sites across 3 countries. Despite the quantity of machines, Asset Framework templates made configuring their data hierarchy simple and straightforward. Illovo was easily able to

capture variables such as bags per minute, shifts, downtime reason codes, and Illovo’s core OEE analytics: availability, performance, and quality. These templates were not only simple and effective, but were 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.”

Using Asset Framework (AF) and PI DataLink, Illovo was able to pull customizable reports for predefined periods using Event Frames, analyzing the data not only by machine, but also by shift or downtime event. This helped the team isolate human or 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 to improve,” said Melrose. Adding PI Vision to their new solution made the new data even easier to

CHALLENGE

Inconsistent product weights from variance in Form Fill and Seal packing machines

SOLUTION

Real-time reporting on 49 packing machines across 5 sites in 3 countries

BENEFIT

In just 3 months, improved:

- Performance 50%
- Availability 25%
- OEE 30%



Illovo uses PI Vision dashboards to see the real-time OEE of its FFS machines.

process. Each machine had its own PI Vision dashboard with the relevant information laid out in an intuitive fashion and simple symbols to make the system easy-to-navigate by newly trained staff.

YOU DON'T NEED A CUTTING-EDGE SOLUTION FOR CUTTING-EDGE RESULTS

Once these reports were operational, they provided contextualized information for tracking performance on each machine. Operational personnel could then focus their efforts on the correct problems and more efficiently troubleshoot and problem solve to improve OEE. The information received from the 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, [the PI System] enabled improvement to happen really quickly.”

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%. Going from insufficient and unanalyzed data to a simple, cost-effective data system was transformative. Illovo was able to harness operational data and streamline its packaging systems. Melrose summed up the value of the PI System: “It’s just an indication of what can happen with the right focus in the right areas with the right information.” Illovo is now looking to expand use of PI Vision and Asset Framework to bring the benefits of this effective solution to more of parts of its operation.

[For more information about Illovo Sugar Africa and the PI System, watch the full presentation here.](#)

PI System Components:

PI Server™

- Data Archive
- Asset Framework
- Asset Analytics
- Event Frames
- Notifications

PI Vision™

PI DataLink™

PI Connectors™



Asset optimization is possible at minimal cost with basic technical skill using the PI infrastructure.”

— Lloyd Melrose, Group C&I Engineer at Illovo Sugar Africa

Melrose, Lloyd. “Sugar Packing Station Optimization using OEE”
<https://www.osisoft.com/Presentations/Sugar-Packing-Station-Optimization-Using-OEE/>