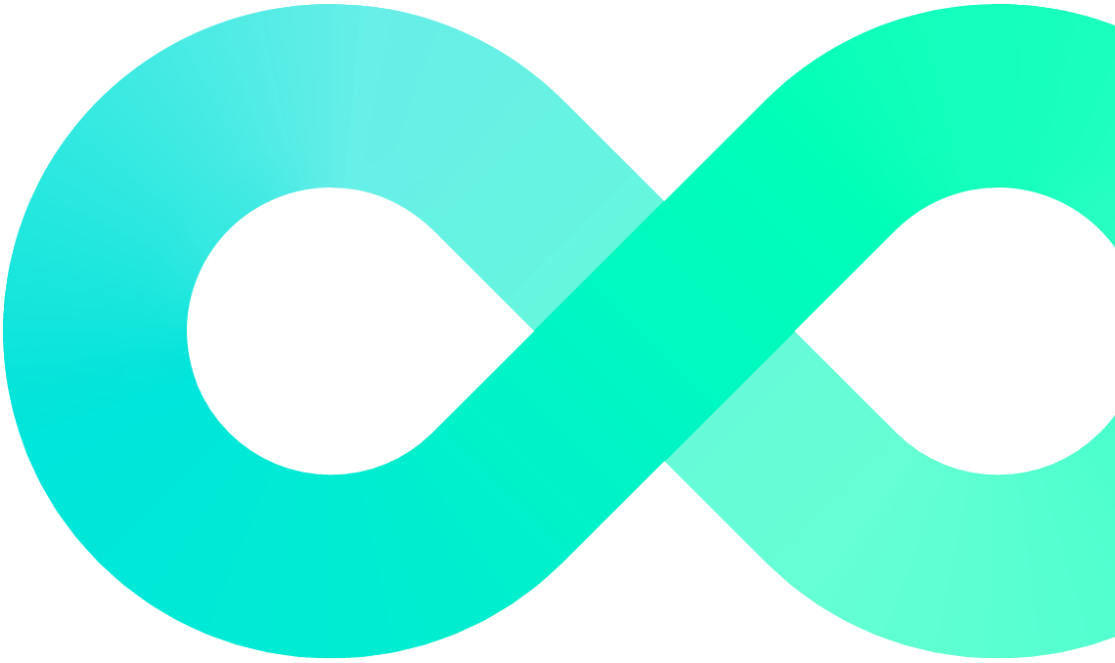
IDENTIFY OPTIMIZATION POTENTIALS

Improve production with enhanced transparency

Food and beverage companies are facing a variety of challenges, including a shortage of skilled workers, increased competition, advanced customization, and a scarcity of resources, to name a few. Staying competitive is becoming increasingly difficult and requires greater transparency into a company's production data and production steps. This enables quick and reliable decisions to be made and optimization potential to be identified.



SIEMENS

THE IMPORTANCE OF IDENTIFYING PRODUCTION DISRUPTIONS

Gain detailed insight into production steps

The increasing shift toward digital transformation is enabling food and beverage companies to fully integrate IT and OT to improve their production capabilities and increase productivity. Ultimately, food and beverage companies must focus on improving their production processes to remain competitive.

Simplified access to all the necessary data from the IT and OT environment enables easy identification of production faults.

To stay on the cutting edge of technology and be more competitive, manufacturers need access to IT and OT data to improve their cycle times.

How to improve productivity

To increase production efficiency, food and beverage companies need to reduce line downtime and increase throughput. To do this, they need to identify and gain deep, detailed insight into their production steps. This is the only way to ultimately identify the steps in the production chain where there is room for optimization. However, manually identifying and monitoring these production steps is not reliable enough and too time-consuming. In addition, different programming standards and a lack of information about the entire manufacturing process pose significant challenges. One way to overcome these challenges is to access data from IT and OT to identify potential production disruptions and better exploit optimization opportunities.

The data provides a reliable basis for identifying production bottlenecks and initiating optimizations. This is the only way to sustainably increase production efficiency and ensure competitiveness.

One way to use IT/OT integration to identify optimization potential and improve production processes is with Industrial Edge and the Industrial Edge apps Performance Insight and Industrial Information Hub (IIH). Industrial Edge devices can be easily connected to sensors, actuators, machine controllers or entire lines. Industrial apps and connectors collect operational data from greenfield and brownfield systems and quickly make it available to higher-level systems, the IIH for local data standardization and contextualization, and other applications such as IIH Essentials or Performance Insight.

The IIH Essentials application is critical for managing shopfloor data of machines. It helps structure and harmonize data for further processing, such as with the Performance Insight app. This Industrial Edge application provides easy visualization of machine data (e.g. cycle times) with out-of-the-box KPI dashboards, widgets and formulas for defining and calculating production KPIs, unlocking the full potential of line productivity assessment. The Performance Insight app allows you to identify time gaps in production, thus making it incredibly easy to detect optimization opportunities and make adjustments for improvement. Industrial Edge applications can be used locally on the plant floor on Siemens Industrial Edge and in the cloud on Siemens Insights Hub. In addition, centrally installed Industrial Edge Management enables food and beverage companies to scale the solution across edge devices inside and outside the factory. This makes it possible to identify time gaps even within their production sites around the world. Leveraging Industrial Edge further enhances these benefits by providing an IT-secure and scalable platform, ready for regulations like the EU Cyber Resilience Act (CRA), enabling centralized management and deployment of software, firmware, and configurations across machines, lines, and entire production facilities.

Identify optimization potentials by analyzing and improving cycle times

A food and beverage company's ability to compete is closely tied to its ability to effectively identify opportunities for improvement. The right solution can provide efficient access to data from IT and OT environments to easily identify production disruptions and quickly take corrective action. A combination of Industrial Edge platform and the Industrial Edge apps IIH Essentials and Performance Insight does just that and is scalable across multiple plants.

Evaluating cleaning processes in production

Clean-in-Place (CIP) analysis offers transparent monitoring of cleaning processes within production lines. By collecting CIP process parameters from various systems via communication protocols such as OPC UA, SIMATIC S7, and Ethernet IP, companies can unlock significant benefits. This analysis leads to considerable time savings, as reduced cleaning times enhance equipment availability. Furthermore, it contributes significantly to resource conservation and sustainability by drastically cutting water, energy, and chemical consumption. Crucially, continuous quality control of the CIP process also ensures improved food safety and overall product quality.

For discrete processes, the Performance Insight's Step Time Analysis feature, part of the Siemens Industrial Edge ecosystem, visualizes the duration of sequential control steps to identify production bottlenecks. As a result, food and beverage companies benefit from increased plant availability, reduced engineering effort, and improved throughput.

Easy deployment of the Industrial Edge platform for IT/OT integration and out-of-the-box dashboards to quickly identify bottlenecks make it easier to identify optimization opportunities.

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