

TAKE CONTROL OF YOUR FOOD & BEVERAGE PLANT FLOOR

AT A GLANCE

- Take control of real-time, accurate production data, planned production schedules, quality checks, machine breakdowns, inventory levels, and more.
- Truly integrated information lets food and beverage manufacturers increase productivity, manage yield, and improve inventory accuracy and food safety.
- A comprehensive manufacturing software solution offers a clear view of what is happening on the plant floor, delivering much-needed connectivity, process automation, tracking, and analysis.



The Power of the Plant Floor

Today's food and beverage manufacturing enterprise gains a key competitive advantage by implementing an extremely strong plant-floor control system, also known as a manufacturing execution system (MES).

Many ERP software companies claim to support manufacturing companies, but their solutions do little more than accounting, order entry, and other office tasks. They are not suitable for use on the plant floor, and they provide little value to the manufacturing process. According to many manufacturers, traditional ERP software actually hinders manufacturing, rather than helps it.

The key is to implement a solution that allows manufacturers to take control of the plant floor; this solution must include job/production management, process instructions, production scheduling, ultra-detailed real-time inventory control, tool tracking, production tracking, traceability, labor tracking, PLC machine integration, and much more. These benefits are what true MES solutions offer, and they can be offered as pure-play systems that either connect or fully integrate with your ERP.

Baseline Capabilities

Baseline capabilities for an MES include:

- Simple, easy-to-use design for use by plant-floor personnel
- Real-time information reflecting up-to-date processes
- Online access for easy availability via browsers
- Built-in barcode labeling
- Built-in support for mobile/wireless handheld units
- Built-in integration with machine PLCs
- Built-in integration with weigh scales, metal detectors, and other equipment
- Ability to trace all ingredients and raw materials

An MES system delivers functionality supporting these capabilities in two main areas: R&D and production tracking.

Logistics

Manufacturing logistics determines packaging design, the ingredients needed, how those ingredients come together, and the processes necessary from plan to completion.



Capturing plant-floor activity as it happens is a powerful way to increase overall visibility.

Ingredients and Packaging Lists

Robust plant-floor reporting must track a master list of ingredients and appropriate associated packaging such as descriptions, ingredient or packaging type, and revisions. An easy-to-use mechanism to upload small digital photos of each item is included. The ingredients list also provides links to many other areas of the system, where applicable, such as key ingredient dates, safe quality foods (SQF), inventory, shipment history, and problem history.

Process Routings

A process routing is the series of steps or recipe required to make an item. This function defines those steps. It includes the operation number, operation name, approved machines and suppliers, crew size, packaging type, and other key routing data.

Formula

Each food and beverage manufacturing process has a distinct formula defining the components that make up a recipe. A flexible formula function offers a variety of methods for visualizing and editing the formula.

Multi-Ingredient Production

An MES system must identify and control manufacturing processes where multiple ingredients are produced from a single operation. This capability is critical for bakery, confectionery, and snack manufacturers.

Production Tracking

Robust production tracking keeps track of machine production, including detailed and summarized reports. Good machine and plant-floor tracking reduces the number and scope of recalls, which can cost manufacturers up to millions of dollars and damage a company's reputation.

Control Panels

Control panels offer a simple-to-use, yet powerful user interface for plant-floor personnel to track and control machine status, labor hours, production, inventory, tooling, and much more.

Production Line Tracking

A workcenter log provides a detailed history of all events that occur at a machine, including all production, maintenance, and downtime. This function reports on uptime, availability, and machine efficiency. Far-reaching benefits result when integrating this function with other business processes, including production tracking, inventory, labor tracking, tool-life tracking, and control plans.

Job Tracking System

This system tracks jobs and work orders within the food and beverage manufacturing facility. Usually, a job represents an instruction to the plant floor to produce the right quantity of ingredients by a specific date. The system is the foundation for production scheduling and can be used for simple scheduling on its own.

Quality and Compliance Tracker

The ever-changing regulatory requirements mean that manufacturers often have to manually update and conform. Such updating could mean having staff who constantly are updating paper-based documents and managing a slew of binders.

Whether your compliance requirements range from SQF through BRC, a single integrated solution that gives you a view of all of your compliance and regulatory guidelines eliminates the paper chase and provides structure to your audits.

Setup Tracking

Setup tracking supplies a place to record machine setup times and issues, including detailed data on reasons for setup delay. This feature helps shorten setup times and improve setup consistency.

A robust MES system provides the ability for comprehensive traceability from receipt of raw materials through production.

Production Information Visibility

In addition to IT systems covering logistics and production tracking as noted above, a robust MES system must give a manufacturer visibility and management of ingredients, quality, scheduling, gauge tracking, and inventory management in order to track individual items or packaging supplies on the plant floor.

For example, full process traceability is critical to track everything from receipt of raw ingredients to shipment of finished goods and all steps in between. An MES's advanced features must automatically track the complete genealogy of all inventory containers, providing both an upstream and a downstream trace, even in complex food and beverage manufacturing environments. You need this data to track down and isolate all raw ingredients used in a defective lot, or trace exactly how a defective item was produced and what factors were involved.





Additional Communication Technology Needs

Other advanced technologies for plant-floor control include integrated barcode printing and reading capability for inventory, gage control, time and attendance, and user log-in cards.

Wireless networking, touch-screen functionality, integrated radio frequency identification, and automated notification capabilities are also key for plant-floor control.

Controlling the Plant Floor

A modern, powerful, user-friendly MES is critical to meeting food and beverage manufacturing needs

and enabling the end-to-end visibility required to run an effective, efficient enterprise. MES in the cloud inherently offers greater connectivity to a consolidated set of data from the entire enterprise. The cloud's digital nature enables automated processes both within and upstream of production to ensure critical data is gathered and shared with operators, plant-floor managers, and corporate leaders for insights into continuous improvement opportunities. The tracking and analysis of ingredients and formulas, combined with greater automation and connectivity delivered by a modern MES, offer greater quality management, business visibility, and ultimately control of the entire enterprise.

ABOUT PLEX

Plex Systems, Inc., a Rockwell Automation company, is the leader in cloud-delivered smart manufacturing solutions, empowering the world's manufacturers to make awesome products. Our platform gives manufacturers the ability to connect, automate, track and analyze every aspect of their business to drive transformation. The

Plex Smart Manufacturing Platform includes solutions for manufacturing execution (MES), ERP, quality, supply chain planning and management, Industrial IoT and analytics to connect people, systems, machines, and supply chains, enabling them to lead with precision, efficiency, and agility. Learn more at www.plex.com