

The Four Elements of an Effective Food Safety Management System



At a Glance:

- As food and beverage manufacturers develop and enhance their Food Safety Management Systems (FSMSs), four key components enable them to meet demands with minimal business disruption, for a manageable cost.
- This paper outlines the key components of an effective FSMS: HACCP plans, manufacturing operations management (MOM), instant traceability and recall management, and single-source ERP.
- Food and beverage manufacturers can use the information in this paper to identify, develop or jump-start an FSMS that includes these four components plus the critical dimension of complete integration.

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Food and beverage manufacturers can easily become overwhelmed as they work to meet challenging customer requirements and government regulations, such as the Food Safety Modernization Act, while continuing to minimize costs and maximize profitability.

To meet these demands, manufacturers must develop and execute written food safety plans. They must have systems in place that enable them to rapidly identify and track every ingredient for each of their products through all processing steps: from receipt through processing, packaging, and shipping, to the exact customer location.

In the case of an investigation or recall, a manufacturer must be able to quickly show documentation of each step performed for a particular product or ingredient, not only within its own organization but also at least one step back and one step forward in its supply chain.

There's never been a greater need for a comprehensive food safety management system (FSMS).

The Four Key Elements of FSMS

A complete FSMS enables the food and beverage manufacturer to meet all of its customer and government demands with minimal business disruption, for a manageable cost. An effective FSMS includes four components:

- HACCP plans
- Manufacturing operations management (MOM)
- Instant traceability and recall management
- Single-source

HACCP Support

Manufacturers must have documented HACCP plans and corrective actions/preventative actions (CAPAs) and be able to provide such documentation to the

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Food and Drug Administration (FDA) upon request. They must also maintain all of these records for a minimum of two years.

To efficiently and effectively comply with these mandates, leading manufacturers use FSMSs that enable electronic document controls and electronic signatures. Such systems include workflow management functions, checklists/ standard operating procedures (SOPs) and critical control point alarms. They also allow for statistical process controls (SPC) charting and the easy collection of quality data.

Not only do effective FSMSs enable compliance in these areas, but because they automate data management processes that would otherwise require manual intervention, they save costs and improve productivity.

MOM

Control of plant floor activities is a key to a manufacturer's overall efficiency. More and more manufacturers use FSMSs that provide production tracking and scheduling, scaling and rejection tracking. Such systems also provide overall equipment effectiveness (OEE) reporting and analyses that help manufacturers avoid costly breakdowns, develop a knowledge base of technical experience, respond quickly to maintenance problems and maximize productivity.

Best-in-class FSMSs also include human-machine interface (HMI) and machine/equipment integration (SCADA) functionality. They assist in managing inventory by enabling manufacturers to easily track consumed ingredients and intermediate inventory in real time.

Hazard Analysis & Critical Control Points (HACCP)

HACCP is defined by the FDA as “a management system in which food safety is addressed through the analysis and control of biological, chemical, and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product.”

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Traceability and Recall Management

With the number of audits and recalls on the rise, food manufacturers' FSMSs must track every ingredient from receipt through finished product delivery, at least one-up and one-back in the supply chain. This capability is often referred to as product genealogy usage.

With best-in-class FSMSs, control processes are in place to immediately address any quality issues. If a quality problem is suspected or identified, here's a typical scenario:

The distributor or customer logs into its FSMS and creates a problem report, noting the unique identification number, batch number or barcode scan that identifies the problem ingredient by its lot or batch. The problem ticket triggers an alert inside the system. Quality automatically receives the ticket, along with a complete traceability tree for the problem product, including all ingredients.

The FSMS performs a root-cause analysis and identifies the problem. All ingredients within the identified batch are quarantined inside the software. Then the software quarantines the inventory not yet consumed and all finished goods still in stock, and identifies any shipped products that need to be recalled. Notifications are immediately sent to all distributors and customers.

This speedy response meets mandated turnaround times and notification requirements. It also enables manufacturers to isolate any problem ingredients early, reducing the scope of any audits or recalls.

ERP for Food and Beverage Manufacturers

The fourth, and final, component of an effective FSMS is enterprise resource planning (ERP). ERP systems have traditionally included only finance and accounting. Today's ERP solutions also include advanced costing, customer resource management (CRM), human resources, maintenance and purchasing.

While, by definition, an ERP system covers all facets of a business, not every solution that calls itself "ERP" actually supports all functions effectively or within a single system. Also, because ERP systems have their origin in the more industrial manufacturing industries, many are not well-suited for the food and beverage processing environment.

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Comprehensive FSMSs include ERP functionality that has been developed to meet the specific needs of the processing industry.

eHACCP

- Document control
- Compliance management
- Checklists/SOPs
- Corrective & preventive actions
- Critical control point alarming
- Quality data collection
- SPC charting
- Electronic signatures
- Workflow

Traceability

- Product genealogy
- Recall management
- Lot traceability
- Recall scope reduction
- Tainted product containment



MOM

- Production tracking
- OEE reporting
- Touch-screen operator interface
- Rejection tracking
- Machine integration (SCADA)
- Consumed raw-material tracking
- Production access controls
- Scaling
- Production scheduling

ERP

- HR/skills matrix
- Accounting/finance
- Advanced costing
- CRM
- Maintenance
- Purchasing
- Order management
- Supplier & customer portals

One for All

While there are many systems on the market today that provide one or two of the four components of a comprehensive FSMS, best-in-class food and beverage manufacturers use single-source technology solutions that include all of these elements.

Plex Cloud ERP is one such solution. Not only does it include all four elements of an effective FSMS within a single system, it links all functions together seamlessly.

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Because all functions are linked together, there is never a need for duplicate data entry. Plex also eliminates the need for the additional work often required to “patch together” disparate systems; identify and correct human errors; and consolidate various spreadsheets and reports.

As a cloud solution, Plex ERP enables productivity increases and cost savings in several ways.

- Maintenance costs are avoided, as there is no internal work needed to manage the system.
- All data can be accessed and correlated easily, at anytime and from anywhere.
- Data is kept online and readily available. It can be accessed by customers, distributors and suppliers, enabling seamless communications and corrective action tracking.
- There is no limit to the information that can be stored online. Users can move photos, PDFs, and more, to the system, continuing to reduce the need for paper files, internal storage and the delays that come from tracking files manually.
- In the case of an audit, all required documentation can easily be pulled right from the system – in hours or less, as opposed to days or weeks.

A complete FSMS like Plex gives food manufacturers peace of mind. They can rest easy knowing that they have a solid foundation to face not only today’s challenges, but whatever comes next in regulatory enforcement and customer demands.

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About Plex

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