



PROACTIVE QUALITY ASSURANCE IN THE FOOD & BEVERAGE INDUSTRY

KEY QUESTIONS:

P3

How does quality assurance differ from recall management?

P5

What does project management have to do with quality assurance?

P6

How can ERP help me visualize what is going on with quality assurance?

PROACTIVE QUALITY ASSURANCE IN THE FOOD & BEVERAGE INDUSTRY

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Being able to provide product and lot traceability has become a critical requirement in the food & beverage industry. Food safety regulations mandate that companies have in place quality control plans and documented procedures, while customers may demand that lot traceability be demonstrated to as part of a supplier audit, to ensure recalls can be managed effectively.

In effect, for both regulatory and customer compliance reasons, lot-control and traceability have become table stakes in the food & beverage industry. Enterprise resource planning (ERP) and quality management, preferably integrated, are necessary solutions. However, the best practice approach goes beyond being able to perform lot-level traceability, or even to be able to do it quickly.

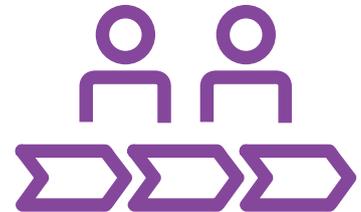
The more progressive companies look for systems and methods that help them take a proactive approach to quality. They look for analytical tools that help them assess their top risks and mitigate them, that help with follow through in non-conformance reporting (NCRs) and corrective actions, and manage the cost of quality, all while being able to prove chain of custody and adequate controls to any customer or regulator.

This proactive approach may sound daunting, and it can be when a company has fragmented systems for procurement, production management, quality management, and document management. However, when all these software functions come integrated within one comprehensive, integrated ERP suite, the proactive approach to quality has the information management foundation it needs.

This white paper will explain this integrated approach to proactive quality management. It will examine how food & beverage manufacturers can leverage software that not only controls for food safety and quality, but embeds the analytical and workflow tools to continually improve on quality and manage it in a proactive way.

TOWARD PROACTIVE QUALITY

Customer requirements around food traceability and quality control can arise in more than one way. As part of any new customer relationship a customer



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may insist on an audit of your plant's quality control and traceability mechanisms. In an actual recall, being able to quickly and precisely track affected lots and direct materials allows for a more focused and less costly recall.

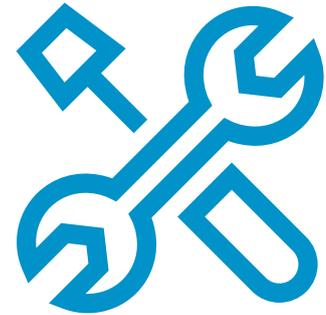
Quality control plans and lot-level production tracking form the basis for traceability. In IFS Applications, for example, control plans are part of IFS Quality Management, though some companies begin devising these plans early in the product lifecycle. Meanwhile, IFS's batch/process manufacturing functionality is able to track each lot, and the materials that were added to them at each step in the process. Integrated document management allows users to attach documents to a lot or batch.

In short, when you have integrated quality management, control plans, manufacturing, and document management, you have the tools for quick, effective recall management. Instead of scrambling for hours or even days to pinpoint affected lots or materials by gathering data from fragmented systems, the integrated approach allows for traceability with a few clicks and queries. A sudden supplier audit or recall event can be easily managed within in an hour or two, rather than days of sifting through data or paper records.

Quality assurance, however, differs from recall management and quality controls. Quality assurance leverages analytical tools to prevent quality issues from occurring in the first place.

Some of the ways that IFS Applications supports proactive quality management for food & beverage manufacturers includes:

- The suite's Quality Management solution offers failure mode & effects analysis (FMEA) software, which systematically analyzes product and process challenges to see where the biggest quality risks exist, and which mitigation steps will be most effective. FMEA grew primarily out of the automotive industry, but can be applied by food & beverage manufacturers, not only to assess product risks, but risks in non-production processes. FMEA will generate a risk priority number (RPN) which helps focus improvement efforts.
- The suite offers statistical process control (SPC) software and reports, which can be applied across operations to reduce process variation and promote continuous improvement. SPC charts give a window into ongoing variation, so if a team wants to track what is going on with key variables, like temperature at a manufacturing step, use of SPC trending is a way to ensure it stays within range. With IFS you can readily compare SPC data with the Process FMEA for further analysis.
- NCR workflows. Under IFS's Quality Assurance functions, it is possible to create NCRs from any IFS Applications screen, including audits. This gives users great flexibility in executing NCRs against any object in the system (such as a purchase order receipt, a delivery, a manufacturing or maintenance process, or a project activity).



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- Corrective action and preventive action (CAPA). In IFS Applications, CAPAs can be created from an NCR, or directly as part of a quality initiative. The “preventative action” part of CAPA is supported by embedded functions like workflow and document management, as well as a shared, component-based data model with manufacturing and enterprise asset management (EAM) functions, since some corrective actions might involve manufacturing or maintenance.
- Quality audits. Support for internal quality audits means the organization can review procedures at any time to ensure they are being followed correctly. Again, embedded document management places needed documentation right where it needs to be.

With these type of capabilities, a company can take a proactive approach to quality management and food safety. Recall management is still necessary, but the best practice today involves more proactive methods. For one thing, regulatory developments such as the Food Safety Modernization Act (FMSCA) are pushing industry toward a focus on preventative controls. Second, customers are becoming more demanding when it comes to food safety concerns, so the proactive approach to quality will likely grow in importance from a customer compliance perspective.

QUALITY ACROSS PROCESS AND PRODUCT

When most people think of quality management and the software features you need to support it, the focus is usually on production management processes and perhaps the testing of materials. For certain, in food manufacturing, it’s necessary to use quality control plans to ensure steps like temperature readings or sanitation of vessels, are always followed. However, quality can potentially be impacted by processes that fall outside of the plant floor or the testing of materials, such as:

- Receiving processes that lead to unusual dwell time in unrefrigerated areas.
- Auditing processes that lack a step or a review participant.
- Purchasing processes that fall short on monitoring issues like certifications.
- Employee safety training processes.
- Maintenance procedures involving sanitation of equipment.

When a company identifies a weakness in a business process that could lead to a quality issue, it should be able to easily launch a NCR to investigate that process. In IFS Applications, NCRs can be launched against any business object (i.e., business process) in the system, as well as from audit functionality, which simplifies the launching of a NCR against a broad range of potential issues. Quality isn’t just about your product or the materials you use—it encompasses all processes and teams, which is why NCRs should be easy to launch, create and resolve.

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COST OF QUALITY

Part of being progressive in quality and food safety initiatives is the resource planning and costing for the initiatives themselves. In the midst of meeting order commitments, it can be difficult to focus on the cost of quality, and adequately staff improvement projects. However, a pure play ERP suite (i.e., one with integrated, embedded applications) with project management and quality management makes cost of quality easier to manage.

For example, say there is a material from a supplier that has failed a quality test. That material can be scrapped, and the cost of it can be assigned to a project, as can the time for any personnel doing auditing, inspection, or additional procurement activities as part of that project. In IFS Applications, this can be accomplished with IFS Project Management, using the same master data the ERP system uses for procurement, quality, and other functions. While there are standalone project management tools that a company could apply to quality projects, there would be the challenge of moving data into the project tools correctly, and then exporting the cost and human resources data back into ERP.

Project management applications should be advanced enough to track subprojects and detailed activities. For example, in finding an alternative supplier, it may be necessary for an auditor to fly out to a supplier's site to assess that company's quality controls. Such activities can easily be tracked in IFS Project Management.

DOCUMENT MANAGEMENT

Embedded document management within an ERP system provides a means of attaching any document, note, or text-based analytical result alongside the business process being executed. For example, plant floor operators at a batch process step can see, right within the manufacturing functionality, any safety instruction that needs to be followed at that manufacturing step. Test results for a lot being produced can be linked to that lot and are easily viewed as part of the lot history.

Likewise, with the IFS EAM solution, embedded document management provides a way to link technician notes, or other documents that give insight on servicing of assets, so that the next technician who works on the equipment can view that information.

The fact that the document management is embedded means there is no special programming to link documents to business objects in the ERP system. It also is possible to place certain document types within roles-based portals. In this way a plant manager could see all NCRs related to batch/process manufacturing, or a procurement manager could see all NCRs involving materials.

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FOUR KEY FUNCTIONS FOR PROACTIVE QUALITY

- FMEA analysis and reporting. Pinpoints a plant's biggest food safety risks, and the most effective methods of mitigation.
- NCR and CAPA reporting tied to workflow and document management. Non-conformances need to be resolved, which document management and workflow help make happen.
- Project management to track the cost of quality. Project management can assign resources to projects, and track the costs involved.
- Roles-based UIs to surface critical data, alerts, and metrics from multiple application functions. IFS Lobby can be the "home page" for a role's view into quality-related metrics and responsibilities.

VISUALIZING TRENDS

Any ERP system should have the user interface (UI) and dashboard tools that make it easy for people in specific roles to see what they need to know, consume alerts, and navigate the system. In the food & beverage sector, much of this information will involve quality and food safety issues.

Within IFS Applications, there are multiple mechanisms for roles-based UIs. One of the latest is the IFS Lobby functionality. IFS Lobbies are roles-based, central views into the data from the ERP system that ties to a specific role. There are preconfigured lobbies for many common roles, as well as the ability to easily tailor the content. A Quality Manager's Lobby, for example, might include SPC charts and quality reports from IFS Quality Management, and summary information regarding audits, NCRs, or CAPA processes. It might also include views from Project Management on the costs involved in current quality improvement initiatives or recent recall activities.

The Quality Management application in the suite already has a rich set of reports, charts, and metrics. The SPC charts are especially useful for visualizing variances in production quality. Additionally, IFS offers a function called Visualizer, initially created for manufacturing information, that is a dashboard of key metrics and action items for production managers and plant-floor operators. These Visualizer metrics can be embedded into a Lobby.

Within food & beverage, there is the dual challenge of meeting customer commitments, while also ensuring food safety and being able to trace chain of custody. In the rush to hit delivery windows, which can involve significant penalties if missed, it can be difficult to focus on a long-term quality improvement without the proper roles-based UI. That makes mechanisms like Lobbies essential to making a broad and deep solution easy to use.

WHAT IT ADDS UP TO

Ultimately, managers in the food & beverage industry must be able execute on customer commitments and maintain tight control over chain of custody, while also looking to improve on quality over the long term. The best way to support all these dual set of needs is through a component-based ERP suite with embedded functionality for Quality Management, Quality Assurance, EAM, as well as document and project management.

The control comes mainly from control plans and batch/process manufacturing tracking, while the proactive improvement comes from Quality Assurance functions. Sure, it's essential to have software which enables recall management and quality control mechanisms, but to get to the next level, it's about taking a proactive approach to risks and quality assurance. That calls for Quality Assurance, supported by cross-functional capabilities like document management.

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With integrated quality management, the organization can quickly figure out why a quality issue arose, and mitigate that risk from happening again.



sought-after consultant across multiple industrial sectors. Leedale holds a B.A. in Business and Economics from Wittenberg University in Springfield, Ohio and an M.B.A. from Ohio State University in Columbus, Ohio. He is an author of the current APICS body of knowledge and an author of APICS' current Lean Enterprise Workshop. His certifications include Certified Fellow in Production and Inventory Management (CFPIM), and Certification in Integrated Resource Management (CIRM).

ABOUT IFS

IFS develops and delivers enterprise software for customers around the world who manufacture and distribute goods, maintain assets, and manage service-focused operations. The industry expertise of our people and solutions, together with commitment to our customers, has made us a recognized leader and the most recommended supplier in our sector. Our team of 3,500 employees supports more than ten thousand customers worldwide from a network of local offices and through our growing ecosystem of partners.

For more information about IFS, visit IFSworld.com



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