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Filling Margins

Manufacturing execution systems offer new recipes for success in CPG operations.



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A New Landscape.

In the last decade, consumer packaged goods (CPG) brands have watched as their industry has completely transformed around them.

The days of long production runs and limited SKUs are long gone. Brands must now satisfy the needs of more diverse consumer groups and retailers, from the higher-end organic and specialty segments to dollar shops and bulk stores. This is putting pressure on CPG producers to deliver greater product diversity and offer more dynamic pricing.

The competitive landscape is also evolving. Many smaller brands are now outperforming their long-dominant name-brand counterparts¹, while a mix of online retailers and emerging direct-to-consumer brands only make the marketplace more complex.

To remain relevant to consumers and improve your profitability in the largely low-margin CPG industries, you must be able to:

- Maintain consistent quality worldwide.
- Manage raw material and production costs.
- Shorten production runs and bring new products to market faster.
- Meet customer and retailer demands with more responsive supply chains.
- Comply with food and product safety requirements.



“By 2025, a staggering 4.2 billion people will be part of the consuming class. For the first time ever, the number of people with discretionary income will exceed the number still struggling to meet basic needs – a phenomenon that may well be the biggest opportunity in the history of capitalism.”²

“The great fragmentation is manifested in consumer behavior and market response. In both developed and emerging markets, there is a wider variety among consumers now than at any time in the recent past.”³

¹How U.S. CPGs can get their groove back, Strategy &, 2014. ²Tough Choices for Consumer-Goods Companies, McKinsey & Company, December 2013. ³2015 Consumer Goods Trends, Strategy &, 2015

A Recipe for Success

You can't control a changing industry, but you can control how you respond to it.

Today's challenges of producing a more diverse mix of products and getting them to a wider range of trading partners as quickly as possible demands that you get the most out of your production, packaging and supply-chain operations. That's why a manufacturing execution system (MES) is more important than ever.

By replacing outdated paper-based data tracking, an MES allows you to view production information faster and at deeper levels for smarter and more responsive operations. When incorporated into The Connected Enterprise, this information can be easily aligned with your business systems and supply chains to deliver valuable new insights.

For example, imagine being able to track final yields back to individual suppliers to better understand the associated costs or quality implications.

An MES also supports end-to-end production management. This offers continuous opportunities to achieve operational excellence by optimizing your throughput, and improving asset efficiency and first-pass quality.

MES Improvements
Recipe for Success

Ingredients:	Results:
<input checked="" type="checkbox"/> Quality	- Reduce production costs up to 18%
<input checked="" type="checkbox"/> Costs	
<input checked="" type="checkbox"/> Responsiveness	- Improve first-pass quality up to 12%
<input checked="" type="checkbox"/> Supply Chain	
<input checked="" type="checkbox"/> Compliance	- Improve yield & reduce losses up to 10%
<input type="checkbox"/>	

Comments: An MES can deliver measurable cost savings and production improvements

“Resilience has long been a goal in manufacturing, but today's stakes are higher. With economic pressures and increasing concern over quality, manufacturing processes need predictive optimization to maximize up-time and use of raw materials.”¹

“Enabled by integrated control and information, The Connected Enterprise transforms competitiveness by converging information technologies (IT) and operational technologies (OT) to access and capitalize on data.” - Keith Nosbusch, CEO, Rockwell Automation

Improve Quality Enforcement

Consistent product quality equals a consistent customer experience. Today's consumers have plenty of alternatives if they are turned off by your product's quality – including store-brand options that bear many similarities to big-brand products but at a fraction of the cost.

“In many instances, shoppers no longer can distinguish between national and private label brands.”¹

Delivering consistent product quality is key for CPG producers that have production facilities located around the world and rely on different raw materials in different regions. You need to deliver a consistent product regardless of location.

An MES provides the foundation for a continuous quality program and can help you improve quality enforcement in three key ways.

1

An MES enables you to more effectively use machines for greater **first-pass quality**. Product quality tests or no-fault forward systems can be managed and executed in the MES, while also providing instantaneous results to help limit the release of subquality product.

2

Your MES allows you to track production and supply-chain data to **analyze and better understand quality issues**. Backward genealogy, for example, can help you better understand how raw-material quality affects finished-product quality. You can also access real-time views into facilities or areas where off-quality product has been discovered.

3

An MES can support **more comprehensive quality management programs** to support your specific operational requirements. This includes supporting in-line and offline testing, net content control, quarantines and comprehensive reporting.

“More than three-quarters of food-and-beverage and CPG manufacturers say ensuring consistent quality of products is the top strategic objective for their manufacturing operations.”²

Control Costs

The constant pressure to contain production costs is made all the more difficult when you must contend with fluctuating raw material costs and increasing energy costs. Additionally, production inefficiencies and poor raw-material usage can drive up costly waste.

You need to get the most out of your resources, and minimize waste and inefficiency to make your operations more cost-effective. The savings can help you deliver more competitively priced products or can be directly passed onto the bottom line.

An MES can help you reduce your costs through more efficient production, and help you better understand different costs throughout a product's life cycle, from raw-material receipt to the final product delivery.

Streamline Reporting

Migrate your inventory management and other information reporting from paper-based systems to an electronic MES. The switch can decrease your labor demands and costs, as well as improve reporting accuracy by minimizing the potential for human error.

Improve Inventory Management

Improve your control over raw-material lots and work-in-progress inventories to achieve more granular insights into your on-hand inventory. This enables you to manage materials in almost real time for fresher ingredients and reduced spoilage.

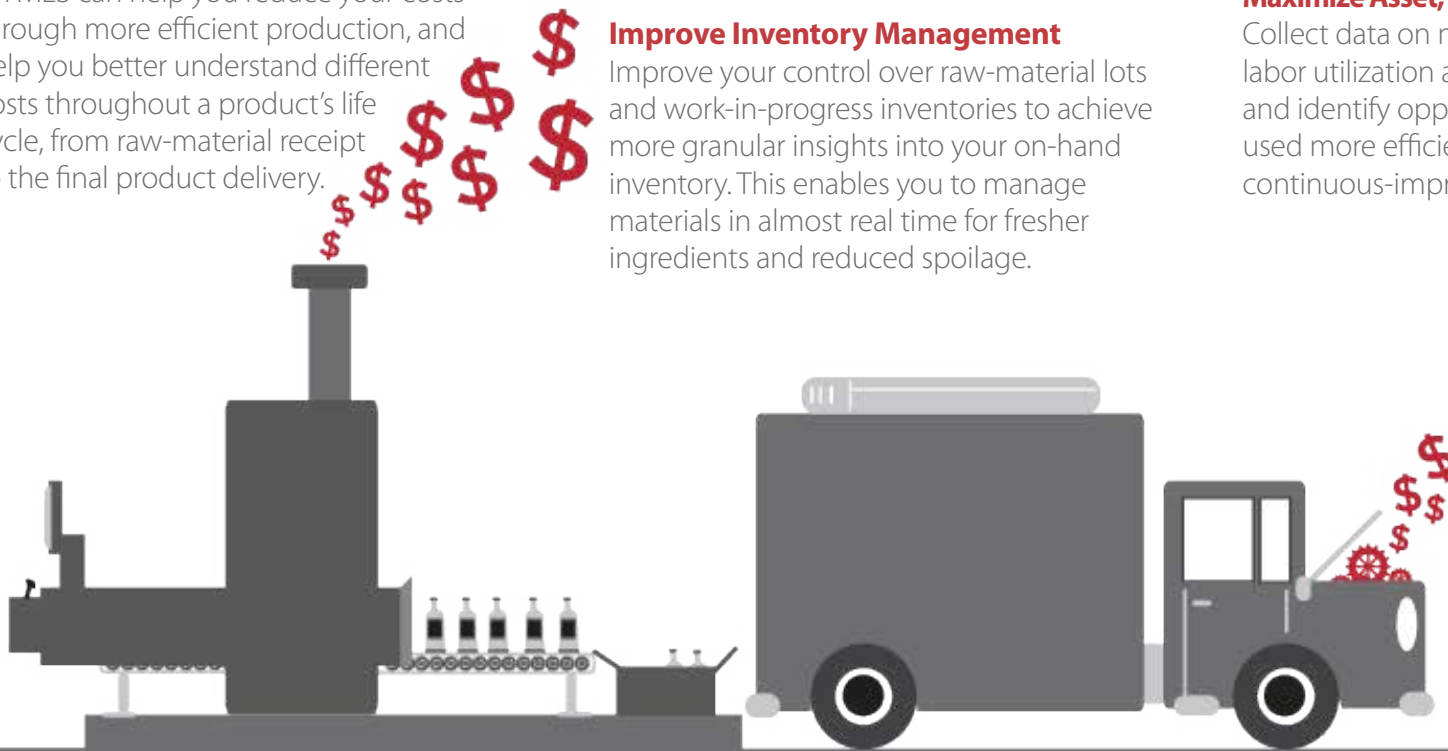
Compare Production Costs

Leverage information collected in an MES to:

1. Compare different production points
2. Compare associated costs for different products
3. Identify areas where cost differences exist and can be improved

Maximize Asset, Labor and Energy Efficiencies

Collect data on machinery efficiency, labor utilization and energy consumption, and identify opportunities where they can be used more efficiently to lower costs as part of continuous-improvement programs.



React Faster to Market Changes

Changing consumer and retailer demands have resulted in an eruption of SKUs and shorter product-launch cycles. If you lack the speed and agility to keep pace with these changing demands, you risk losing consumer loyalty to cheaper, better or newer competitor products.

An MES enables you to make immediate production revisions for faster responses to customer requests and to support priority product deliveries. All activities can be coordinated within MES software – from creating product definitions within a master recipe to creating, editing and dispatching process orders and enforcing process sequences – to help you more quickly and easily respond to market demands.

Additionally, an MES that uses enterprise integration gateway technology can help make your operations more demand driven and responsive to the changing market. An enterprise integration gateway connects your MES to your business systems and enables real-time, event-driven communications between the two systems. This helps ensure changes made in one system automatically trigger real-time processing in the other, and reduces delays associated with paper-based systems.

Which areas of MOM software have been, or do you believe will be the MOST critical to success?



% Total Respondents

More Effective Supply Chains

In today's fast-changing world, barriers between your manufacturing, business and supply-chain operations will only slow you down. An MES can be the gateway to a Connected Enterprise, data-driven operations, and improved productivity and profitability.

Connect Operations

An MES with integration gateway technology can align your manufacturing system with your business systems and the supply chain through seamless, event-driven communications. To ensure interoperability, consider choosing an MES that is designed with a standards-based, technology-agnostic framework to support the wide variety of business systems and integration practices that most CPG manufacturers use today.

Improve Supply Chain Effectiveness

The ability to schedule and control plant assets, track raw materials and finished products, and collect manufacturing data within your MES can give you greater insights into the operational issues that might impact your supply chain.

Implement Traceability

The Food Safety Modernization Act (FSMA) is expected to implement traceability requirements to help prevent or reduce food-safety problems. The same software used for your MES can also serve as the foundation for a track-and-trace or serialization system to provide these capabilities. The benefits of such a system also go beyond traceability, and can include more efficient product recalls and more customer-targeted marketing programs.

“The FSMA requires that any contamination be prevented. This means following a product from the origin of raw materials to product distribution.”¹

Simplify Compliance

Food-safety and quality managers need to ensure production operators are properly conducting compliance tests, getting the right results and taking the appropriate action should a test fail. At the same time, these managers may be expected to review hundreds of pages of compliance documentation daily to identify any testing anomalies.

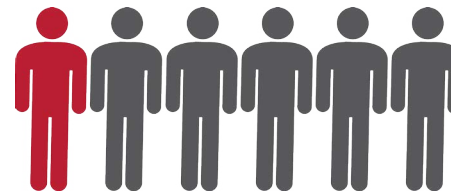
On the production side, product-compliance capabilities built into a modern MES can help:

- Ensure operators conduct the correct compliance test based on verified product and process-order information.
- Remind operators to initiate a test at a work center when needed.
- Collect and archive test results along with production data for each process order.

The MES can also give food-safety and quality managers a collective view of compliance testing results across a specified period of time, enabling them to more quickly identify anomalies in product testing. Detailed information delivered in a dashboard-style report can indicate reasons for the anomalies for faster diagnoses and corrective actions.



“One in six Americans becomes sick and 3,000 people die annually due to food-borne illnesses.”¹





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Summary

Improving quality, safety, compliance and speed to market are all achievable goals when you make the move from a paper-based system to an MES. As more CPG manufacturers migrate from disparate networks and “islands of automation” to a single, unified automation infrastructure, an MES will become all the more essential as the primary engine for collecting, aggregating and feeding data across an organization.

For questions or to learn how an MES can benefit your operations, contact a Rockwell Automation sales representative or visit <http://cpgsuite.rockwell-software.com/>.

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