



Food & Beverage / CPG Industries

Life Is On

Schneider
Electric



Overview

There are many macro and environmental trends facing food and beverage manufacturers today. As the world's population grows, migrates to cities, and becomes more affluent, the required volume of quality processed food and beverages increases. In order to protect the environment for future generations, food and beverage manufacturers need to pursue efficient, sustainable manufacturing practices. In the meantime, as the supply of natural resources becomes more constrained, food and beverage manufacturers need to attain higher levels of production efficiency in order to control costs. Also, increasing consumer concerns and rising safety incidents that prompt product recalls have caused government agencies in many countries to impose tougher regulatory standards.

These macro trends have created an increasing need for food and beverage manufacturers to search out efficiencies. By digitalizing the value chain, Schneider Electric's software solutions provide manufacturers with a scalable platform to enhance cross-company collaboration and process execution to improve operational performance, increase asset reliability, maintain quality enforcement, provide consumer traceability and improve recipe agility.



Need for Variety

Food & beverage manufacturers sell into varied markets and make thousands of complex products; this complexity is further increased by growing and ever-changing market and consumer demand. Technology advancements present the opportunity to simplify these complexities and to become more agile while ensuring that products are manufactured correctly. The increased flexibility to make many products across equipment with fast changeovers gives food and beverage manufacturers the ability to quickly respond to market demands, decrease “safety stocks” and take advantage of new business opportunities.

Pressure on Margins

Rising costs of raw materials and energy are straining food & beverage manufacturers. Margins are especially tight, so efficiency and productivity in all phases of the supply chain are important to remaining financially viable. Reducing costs in every area is a primary concern. And fluctuating commodity prices make streamlined operations imperative. Software that monitors product and process variables in real time enables operators with notification and actionable insights so they can quickly identify the reasons for losses and take the proper corrective actions. Slim margins also requires a reduction of waste in the manufacturing processes. This waste takes the form of scrap, downgrades, rework, shrinkage or any issue that lowers yields. And waste in the form of ‘giveaways’, when adding quality ingredients or in filling operations, must be minimized while meeting net content or quality requirements. Providing detailed information about processes and materials, grants greater real-time visibility and awareness of waste.

Increasing Regulatory and Safety Obligations

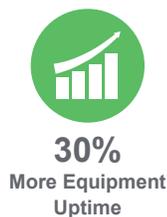
Unsafe, mislabeled or counterfeit products released into the market can damage a manufacturer's brand and destroy consumer trust. In order to maintain brand equity, food and beverage manufacturers must meet increasingly strict food safety, ingredient labeling and environmental regulations. To meet quality requirements at all times, operators require real-time feedback. And with so much regulatory oversight, food & beverage manufacturers need detailed information about the how, where and when of producing a product (genealogy) and where ingredients in each product came from (traceability). Technology that enables food and beverage manufacturers to digitize this process and provide objective evidence of quality and regulatory compliance can prevent fines and help manufacturers build trust with the customer.

Capital Expenditure Constraints

The shift in regional demands and slowed growth in the food and beverage and CPG industries limits the opportunity to invest in new equipment. However, the increase in consumer demand requires an increase in production from existing assets. Manufacturers today are also facing an unprecedented complexity of systems, software and hardware. Many different types, technologies, makes and models of manufacturing equipment—some of it isolated from other equipment and business systems—make the tasks of manufacturing quite daunting. And global corporations often have multiple sites, sometimes the result of corporate acquisitions that must work together toward the same goals.

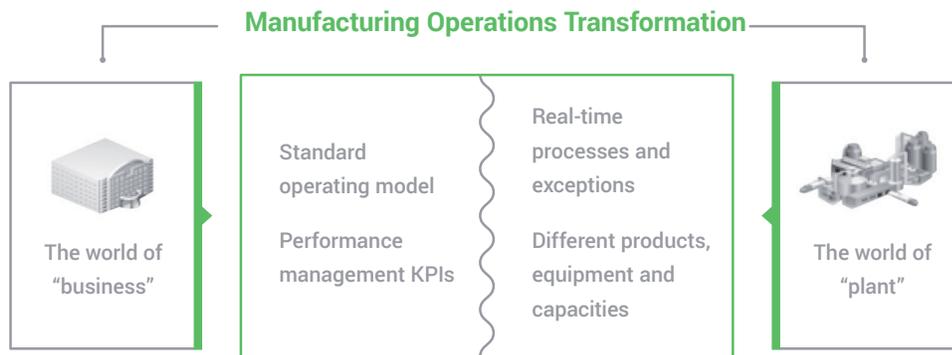
Rapid Response to Consumer Issues

Poor quality finished goods that reach the consumer can cause significant direct and indirect impact to a business. Digitally connected consumers react immediately to safety and quality incidents, which can erode brand equity and damage food and beverage manufacturers' reputation in the marketplace. Although it is ideal to avoid issues with quality and recalls all together, incidents happen and a faulty product may slip through the cracks. Having the ability to respond quickly to safety or quality issues with focused and faster recalls is key in our digital world.



Digital Transformation with Schneider Electric

To remain competitive, manufacturers continuously seek ways to make the most of the equipment and resources. Technology advances like the Industrial Internet of Things (IoT), predictive analytics, cloud, mobility and workflow enable manufacturers to improve operational performance and sustainability, and to reduce the cost of regulatory compliance and consumer safety. Complete digital transformation isn't likely to occur overnight. It happens step-by-step to support shifting priorities in business strategies. Schneider Electric takes an incremental approach to digitization, connecting people processes and systems bridging the IT/OT divide.



Operations Control

Companies that depend on product consistency require operational discipline, regardless of location or equipment—with consistency in specification and quality assurance, procedural enforcement, production tracking and material traceability. System Platform, powered by Wonderware helps to improve production execution and control, allowing food & beverage manufacturers to achieve high product consistency. Increasing the amount and accuracy of production information gives great insight into the daily food & beverage operations.

System Platform easily extracts data from equipment and transforms it into meaningful information, and long term data storage makes data available for reports and analyses. System Platform guards against loss of historical process and product data, which could initiate enormous regulatory fines and penalties. If a network or server fails, System Platform collects, stores and later forwards critical data required to generate necessary regulatory reports.

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With regards to metrics, what we're seeing is consistency in throughput. We are able to tell when problematic areas arise and by having it automated, we are able to take preventive action in order to maintain consistent operation.”

Harry Crigler,
Bean Global Spirits and Wine

Information Management and Analytics

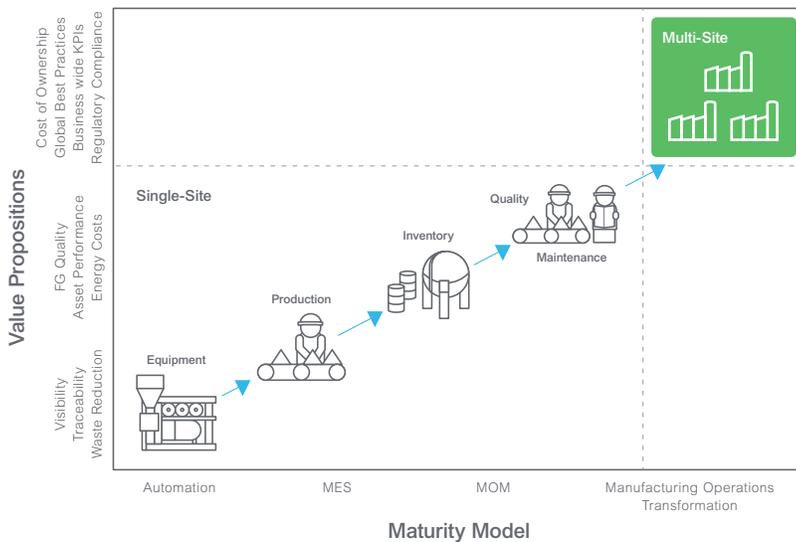
Historian, powered by Wonderware provides out-of-the-box ease of use and flexibility for defining how data is acquired, compressed, stored, archived and retrieved. All data, regardless of its source or time of entry, is fully integrated into a unified and robust information database. Once collected, data can be displayed in a variety of formats for operators, managers and analysts. Standard trending features aid data analysis and the report generation functions make it easy to create and automatically produce standard or custom reports on a periodic or demand basis.

Measure key performance indicators (KPIs), such as equipment performance, daily energy consumption and costs, efficiency calculations, operational costs and regulatory compliance. The ability to track these KPIs over the entire organization can significantly improve visibility into the profitability of the business. Data, alarms and events from all parts of the operation can be aggregated and transformed into useful information, enabling real-time decision making. This information can be displayed via web-based clients throughout an enterprise and used to optimize team performance.



Process and Production Management

Manufacturing organizations are transforming their businesses by digitizing their business processes to deliver new and improved offerings that improve business performance, increase revenue and delight customers. Our model-driven MES/MOM software reduces complexity and costs of deployment by standardizing operational process deployment across multiple sites. Multi-site manufacturing organizations can use this technique to transform and digitize plant operational practices to drive higher levels of collaboration, agility, standardization and operational governance. Process and production management enables manufacturers to improve agility, productivity and performance across sites and production lines while maintaining quality and consistency of operations.



Model-Driven MES/MOM enables our customers to:

- **Centrally develop and manage corporate standards** for MES/MOM functions and applications
- **Sustain and deploy new versions** of standards in an agile and cost effective manner
- **Increase Collaboration** – provide a comprehensive collaboration framework to coordinate people and/or applications in a consistent and governed manner
- **Work Management** – provide the ability to define operational practices that cross-over organizational and application boundaries
- **Modular Application Deployment** – provide the ability to deploy the “right-size” solution to meet specific business needs
- **Visualization & Mobility** – provide a common visualization framework to deliver a consistent user experience from desktop and mobile
- **Standardization** – provides framework to “standardize” operational work practices across a manufacturing enterprise, and caters to site specific practices as well
- **Multi-Site Change Management & Agility** – provide the ability to evolve the solution to meet changing business needs across a manufacturing enterprise web based application architecture

Recipe and Formulation

Digitizing the formula and recipe management processes and recipe execution enables food and beverage manufacturers to flexibly manage more product variations and to reduce the time to market for new product introductions. Recipe Manager Plus, powered by Wonderware is recipe management software that simplifies recipe optimization, deployment, adaptation and execution in manufacturing operations. Electronic recipe management secures consistency in product quality and increases efficiency through automation of equipment setup processes and recipe execution. The automation system neutral software, enables standardization and central management of product formulations for use in multiple production locations and is designed for operational team collaboration to adopt new recipes faster. Recipe Manager Plus software increases business agility by managing more product variations with reliable quality consistency, giving companies the ability to take new products to market faster.

InBatch, powered by Wonderware effectively manages flexible, multi-stream and multi-product batch operations found in the process industries, including life sciences, fine chemicals, food and beverage and CPG. Adhering to the ISA-88 standards for batch control, InBatch provides guidance and oversight to both recipe management and batch execution. The control system independent batch management software automates batch processes to deliver consistent quality to recipe specifications and genealogy for a complete history. Using InBatch software, manufacturers improve yields through increased product quality and operational efficiency. Recipe and batch management standardization across plants also enables companies to reduce time to market.

Benefits of Digitizing Recipe Management

- Reduce machine setup and changeover times
- Consistent batch to batch production results
- Improve operational performance and flexibility
- Reduce risks of managing product variation
- Improve productivity and quality with reports and records of execution history
- Lower cost of compliance with electronic change and execution history, including electronic signatures
- Facilitate standardization of recipe management to improve the new product introduction process
- Fast time to value with rich out of the box functionality
- Reduce total cost of ownership with a web based application architecture

Quality and Traceability

Our Smart Food Safety approach supports food safety compliance and traceability to preserve brand equity and shareholder value. Avoid recalls and improve end-to-end quality and compliance for produced goods including enforcement of quality standards and complete product genealogy. MES Quality, powered by Wonderware safeguards quality and compliance by digitizing and automating quality operations and sample plan execution on the shop floor. It also uses powerful SPC methods to empower stakeholders with visibility into trends and rule-violation notifications to effectively reduce quality losses, minimize variation and improve yields.

MES Quality software helps manufacturers increase efficiency by capturing and monitoring critical information in alignment with other operational activities and in response to shop floor events. MES Quality is designed for quality data collection through enforcement of manual inspection procedures or direct sampling from automated plant equipment or control systems. SPC provides real-time visibility into trends, variation or non-conformance to enable rapid corrective and preventive actions. MES software complements LIMS and quality management systems with automated data collection. Using MES software powered by Wonderware, manufacturers can improve yields through increased product quality and operational efficiency. Automation, standardization and enforcement of inspection and data collection procedures help reduce costs while ensuring quality and maintaining regulatory and product safety compliance.

Serialization enables a product to be tracked and traced electronically as it passes through the supply chain. This means at any point, companies are able to identify and stop the distribution of poor quality or contaminated product back to its source, prevent product mix up, optimize product recalls & returns and ensure only good products reach consumers. Schneider Electric's Serialization Suite harmonizes production applications such as MES and Quality systems, providing an all-inclusive track, trace and reporting solution for a line, a site, or the enterprise. Serialization Suite enables:

- End-to-end Track and Trace from manufacturing through supply chain
- Integrated analytics from production to the end user
- Real-time supply chain visibility, enabling more accurate planning and scheduling decisions

With Serialization Suite, speed to deployment is faster, reducing the Total Cost of Ownership for manufacturers with less substantial changes to the existing manufacturing systems and business systems. Integration of serialization data back into the MES makes it possible to have real-time visibility across the supply chain, from the manufacturing world right up to the end consumer.

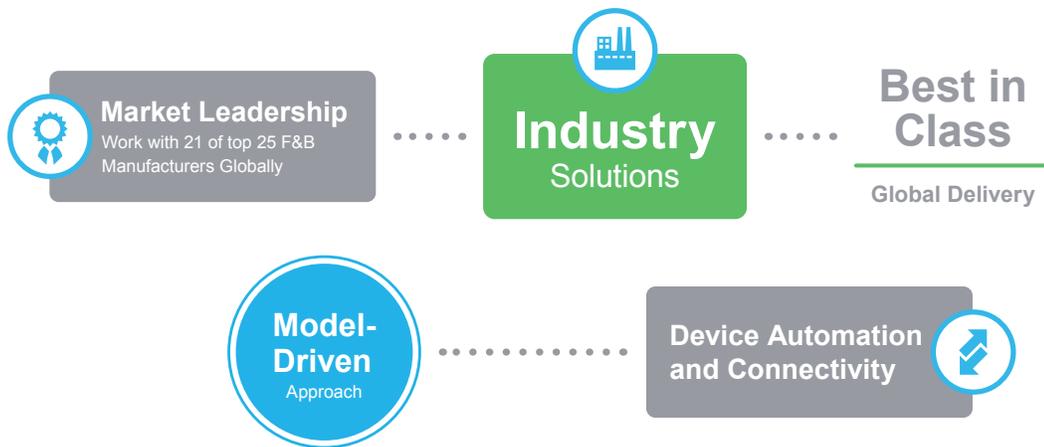
Asset Performance and Reliability Management

Schneider Electric's comprehensive set of asset performance management (APM) and OEE solutions enable manufacturers to improve the reliability of assets across plants. With varying equipment types, ages, and levels of instrumentation, agnostic software, a model-driven approach and hybrid (on premise or in the cloud) approach coordinates manufacturing systems, reduces the need to replace equipment, and is installed cost effectively to reduce total cost of ownership and standardize processes to improve operational performance.

Monitoring performance on equipment helps to identify and lift bottlenecks, increasing throughput, efficiencies and productivity. Line Performance Suite, by Schneider Electric captures and manages packaging line performance, including Overall Equipment Effectiveness (OEE) and downtime tracking. Line Performance Suite provides both manual and semi-automatic data capture and production analysis with both reason codes and root cause analysis functionality. It helps customers be more competitive, profitable and sustainable. Line Performance management includes performance improvement applications along with an integrated operations platform, and work ow applications that make everything work together. Through its workflow-based application framework, the Line Performance Suite enables Food and Beverage manufacturers to overlay operational governance to measure and institutionalize operational practices to sustain improvements.

Our comprehensive Enterprise Asset Performance Management (APM) solution offers data collection, condition-based and predictive asset analytics, integrated workflow and complete Enterprise Asset Management (EAM) capabilities. The open and agnostic solution, enables manufacturers to build on existing investments to reach the next level of maintenance maturity. Using advanced pattern recognition and machine learning techniques, manufacturers can identify equipment problems before they occur and move from reactive to predictive maintenance strategies. Ultimately helping improve asset reliability, availability and ultimately maximize the ROI on assets.

For companies looking to move data to the cloud and reduce overhead, Schneider Electric offers cloud APM and OEE solutions. With flexible data collection options and rapid application provisioning, cloud deployment empowers users with quick-time value with little to no training required. Advanced analytics provided by InSight, powered by Wonderware enables manufacturers to overly process data with OEE and event data for a holistic view of performance. Moving to the cloud is a great option for companies looking to get value quickly and improve collaboration between teams.



Schneider Electric Advantage

Lower Total Cost of Ownership

Hardware agnostic connectivity, model-driven approach to deploying plant processes and a hybrid approach to moving data to the cloud make Schneider Electric the preferred vendor to reduce overhead and lower total cost of ownership. The ability to govern and manage systems centrally helps food and beverage manufacturers capture and leverage best practices across multiple sites to reduce costs.

With over 2 million licenses installed, you can count on Schneider Electric for your digital transformation needs.

Easy to Configure, Easy to Scale, Easy to Deploy

Schneider Electric provides an easy to use, easy to scale and agnostic software platform for integrating with all of your business critical operations applications in the food & beverage environment such as industrial automation, asset management and manufacturing execution. The model-driven approach enables standardization of processes across multiple sites to speed deployment times. With both on premise and cloud deployment options, customers have the option to move data to the cloud when ready and depending on business value.

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From an administrative perspective, we save a lot of time. From a user's perspective, we minimize frustration. That's the number one benefit.”

Igor Valuyev,
New Belgium Brewing Company

Global Delivery, Support and Partner Network

With a global delivery and support team, teamed with the world's largest network of distributors and system integrators, Schneider Electric offers local and personalized support. This provides customers with flexibility in the way solutions are built, implemented and maintained, in addition to providing local or web training options. The programmatic approach to deliver technology and services needed minimizes and manages risks. And a single point of contact is provided for rollouts across single or multiple sites to assist in the building, management, deployment and support.

Enterprise Resource Planning & Business System Integration

Tight coordination between Enterprise Resource Planning, Supply Chain Management and other critical business systems with factory floor operations is required to handle today's rapidly changing consumer demands. To make the most of existing equipment and materials, and to maintain operational discipline, Schneider Electric integrates with business systems to facilitate interaction of production schedules and plans with factory floor manufacturing systems.

Unparalleled System Security

System security is a critical requirement for food & beverage manufacturing operations, particularly with the demands dictated by the FDA, USDA and other regulatory agencies. We offer a security model that can be managed and integrated with the IT department's security, while providing robust data level security. This model optimizes the management of security within the IT department while protecting SCADA and MES systems from cyber, internal or physical risks. We offer extensive knowledge on securing critical networked applications that coexist with other systems within an open infrastructure. Schneider Electric achieves the creation of securable applications, tools and architecture as well as best practices, deployment guidelines and prescriptive guidance for maintaining a secure environment, by collaborating with customers and other industry experts.

For more information on Schneider Electric solutions visit:
software.schneider-electric.com/industries/food-and-beverage

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