

FOOD AND BEVERAGE CHALLENGES ARE OUR SPECIALTY

Optimization's food and beverage specialists have the knowledge and experience required to tackle the most difficult challenges in the food industry. The food industry has similar system requirements to many fast moving consumer goods industries with the added complication of naturally variable ingredients, perishable products and microbiological safety.

Full Turn-key Capabilities

Providing services to the food and beverage industry requires a multidisciplinary approach. Optimization knows how to apply process, chemical and controls engineering principles to food products and follow-up with the skilled trades expertise to fabricate, install and commission food and beverage production systems. Clients include companies involved in food processing, food machinery, packaging, ingredient manufacturing, instrumentation and control, as well as firms that design and build food processing plants and consulting firms.



Services

Optimization's services include consulting support for research and development of new food, biological and pharmaceutical processes, development and operation of product manufacturing, packaging and distributing systems, installation of food/biological/pharmaceutical production processes, design and installation of safe and efficient supply systems, and maintenance support for manufacturing plants.

The Right Resources

Our team has a great variety of capabilities in food service engineering, design, software/automation, fabrication, installation, debug/startup and commissioning. We can help you meet cost, quality, flexibility, and regulatory challenges — from raw material through packaging and final shipment.



Example Food Industry Skills:

Health, Safety and Environmental Compliance -

Regulatory impacts, including OSHA, Title V, NFPA and NEC

Sanitary Process Piping -

engineering, design, fabrication
Sanitary Process Equipment - selection / integration, including kettles, chillers and heat exchangers, fermenters, distillers, dryers, and numerous other process equipment

Skid-based Systems -

engineering, design, fabrication
Liquids and Solids Conveyance and Handling - solution delivery systems, pneumatic conveyance, unitized conveyors

Loading and Unloading Stations -

gas, liquid, or solid
Process Expertise - metered addition of ingredients, mixing, heat cycle control, sanitary design, CIP, metered product delivery

Electrical & Instrumentation Design and

Engineering - with a focus on clean measuring / monitoring / controlling systems

Software and Automation - on numerous control platforms, supporting existing systems, or providing recommendations for new control / automation system components and software

Batch Systems - S88-based software design, control and monitoring, using industry-leading batch platforms, providing unit definitions, raw material / lot tracking, resource management, metrics & reports

Packaging Systems - packaging (corrugated handling, filling, check weighing, labeling), material handling, warehousing

Orbital Welding - four orbital welders (1/4 inch tubing to 4 inch tubing) and a team of pipe fitters experienced in orbital welding for the life sciences, food, and chemical industries

Polishing / Finishing - to meet food industry specifications

Installation Techniques - well-versed in installation requirements to support CIP

Commissioning - debug and startup teams to handle a specific process, or integrating a new design into an existing facility

Capital Project Process - Phases and gates project funding/definition, GAMP methods, FDA certification and validation

Project Examples

Full Service Multidiscipline Capital Projects: Optimization developed operational modifications and capital project initiatives for Beech-Nut's cereal manufacturing plant, optimizing energy efficiency, maintaining process performance and quality. As a result, Optimization continues to provide engineering and implementation support on an on-going basis to support plant improvements and upgrades. Optimization provided time and material service contracts for HVAC engineering, mechanical process technician, process control, mechanical designer, and software/electrical engineer. Optimization also provided skid preliminary engineering documents, software, design review documents, fabrication and commissioning services. The on-site personnel allowed Beech-Nut to maintain or improve its aggressive project schedule and better control the cost and quality of the installation activities. The skid quality was received favorably by Beech-Nut.

Preventive Maintenance Support: Barilla Pasta started manufacturing operations in their new factory in 2008. Optimization has provided various preventative maintenance teams, comprised of 3 to 7 people for the following, servicing two of their four production lines:

- Maintenance controls support
- Building HVAC SCADA system
- Utilities air compressor HMI modifications
- Process lighting upgrade
- Production line hardware upgrades
- Phase 2 powerhouse utilities controls upgrade

Migration Services: Optimization is providing Distributed Control System (DCS) migration engineering and installation for Fresh Start Bakeries, moving to Rockwell's ControlLogix platform. At the supervisory level, FactoryTalk Batch will provide improved recipe handling and information reporting. At the plant floor level, new electrical drives and components are all being replaced. Areas of the plant are being upgraded to meet an NEC Class II, Div 2, group G electrical classification. In addition to project management and automation engineering, Optimization was able to reduce the total project cost by self-performing construction management and electrical installation, eliminating markups and project delays associated with subcontracting these services. Anticipated benefits include a reduced shut-down schedule, increased system reliability, improved reporting, and a simplified suite of recipes.

Additional Example Experience:

- *Provided chilling, flow, pressure and packaging systems*
- *Implemented Clean-In-Place (CIP) systems for batch tanks and process piping*
- *Provided batch system for complete process control from raw ingredient additions to finished bulk bag packaging*
- *Designed and manufactured automated filling machine with integrated, distributed fault message displays*
- *Provided services for investigation, software and electrical engineering and design, drawing release packages, start-up/debug and commissioning for multiple whipped topping lines, including interfacing with an existing CIP system*
- *Developed manufacturing process layouts for new production facilities, utilizing optimum space allocations, equipment usage, and material product flow*
- *Redesigned and upgraded a company's high purity water system*
- *Provided material handling design for sanitary manufacturing utilizing screw conveyors and tube conveyor systems*
- *Designed and engineered material handling system for food manufacturer's warehouse using pallet conveyor systems*

Full Turn-key Skid: engineered, fabricated, ready for install



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Industrial Applications ... from Concept to Completion

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