

Case Study: F&B Plants Reduce Waste and Improve Productivity

This case study examines an engagement by Performance Solutions by Milliken in the food and beverage (F&B) industry. Companies in the F&B industry must adapt their operations to rapidly changing consumer trends and emerging regulatory requirements that specify product safety guidelines, recall notifications, and labeling and packaging procedures. These firms typically find it challenging to establish standardized processes that allow them to monitor internal operations and those of their growers and producers.

Client Company: A global F&B company, with revenues of more than \$5 billion, contracted with Performance Solutions by Milliken in 2014. Performance Solutions practitioners worked with more than a dozen of the company's production facilities, which manufacture a diverse range of brands found on grocery shelves everywhere. The company's plants included both union and non-union environments.

Performance-Improvement Opportunity: The client produced many different products, even within a single plant or on single lines. Rapid changes in product and packaging sizes require efficient equipment changeovers. As with most F&B plants, the ability to integrate discrete and process operations is critical.

Shawn Smith, a Performance Solutions practitioner for six years, worked with two of this client's larger plants (nearly 1,000 employees): one facility produced canned goods and frozen foods, while the other manufactured a variety of food-grade oils. The two plants illustrate the hybrid nature of the industry, with lines incorporating both process, batch-oriented operations (e.g., cooking large volumes of soups and sauces) and discrete, single-piece flow (e.g., packaging products in individual cans, boxes, and bottles).

Developing the base and mixed food formulas was a client core competency. Problems arose, however, whenever a plant needed to change products — e.g., switch a cooking vat from a red tomato sauce to a white cream sauce — due to substantial cleaning requirements. Packaging created additional headaches: One plant, for example, had difficulty filling cans without spills and waste. These issues resulted in lower run times, decreased productivity, and lower plant profitability.

"If they could start minimizing waste, they also could speed the machine to a normal operating rate — and hit two birds with one stone," recalls Smith who — like all Performance Solution

practitioners — has a deep understanding of manufacturing earned through multiple roles at Milliken: plant supervisor, process improvement engineer, Milliken Performance System specialist, lean champion, etc.

Working with Performance Solutions Practitioners: The client’s leaders became acquainted with Performance Solutions via its “accommodate, educate, and demonstrate” program. Leadership was invited to Milliken headquarters, where they learned about the Milliken Performance System (MPS) and toured Milliken’s high-performing facilities. During one visit, the F&B client sent approximately 100 executives to Spartanburg, S.C., to see what a successful performance system looks like, and how it could be the foundation to *their* plants’ performance improvements.

It is not unusual for F&B client companies to come to Milliken with an existing commitment to continuous improvement, says Smith. Many, though, are looking for an external perspective (fresh eyes), access to new ideas and techniques, and, ultimately, a way to develop their own in-house expertise with the guidance of Performance Solutions.

A key step toward improvement at the canned-goods/frozen-foods plant was to eliminate spills and waste. Performance Solutions practitioners conducted a zero-loss analysis, which identified savings (e.g., time, resources, money) if all sources of waste (e.g., spills, downtime, minor stops) from operations were eliminated. Smith applied a dollar figure to each of those small spills, as well as unnecessary minutes of extra cleaning. This led the plants to begin measuring how much waste hit the floor, and holding staff accountable for it. The plant also began to improve machine reliability and changeover times, using Performance Solutions tools (e.g., scheduling wheel) to determine the most effective sequence of products to minimize cleaning (e.g., it’s faster to schedule from one tomato sauce to another tomato sauce).

Getting staff engaged with tracking precise measurements allowed everyone to “understand that they have an opportunity or a problem, and then address it as a group, from frontline associates to plant schedulers,” says Smith. “We help the leadership team develop a plan. And then we help to create accountability by visiting each every so often, to make sure that the plan is effectively executed.” With a waste-reduction plan in place and appropriate improvement tools, staff began to see benefits: suddenly scheduling became simpler, and there was far less waste — and fewer hours of unpleasant cleanup.

Powerful Improvements: The client enjoyed a return on its investment with Performance Solutions of approximately 11 to 1. Other Performance Solutions engagements have provided

client returns as large as 37 to 1, dependent on the state of operations when plants begin working with Performance Solutions. Examples of performance improvements at the F&B plants over approximately 3 years include:

- Waste was reduced by 31 percent
- Productivity improved by 28 percent
- Equipment changeover times were reduced by 64 percent.

Future Success: Over the course of the F&B engagement, client plants gradually adopted MPS and continued to push closer to zero-losses. MPS focused improvement activities around pillars — continuous skills development, safety, daily team maintenance, 5S, quality management, etc. — and helped each plant to establish site- and line-specific objectives. Gradually, adherence to MPS developed an internal base of practitioners, who took over the work of Performance Solution practitioners — generating additional return on investment. “Toward the end of the engagement,” says Smith, “we were meeting with more teams, with far more improvement initiatives going on — but with the same limited amount of Performance Solutions time. In the beginning, we met three days with six teams. Toward the end, we met three days with 15 teams.”

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