



# CASE STUDY

Solutions in practice

## Kaizen in the greenhouse



**Maxwell Boykin (from left), Eun Jung Shin and Vivek Vijayan visit a Sunset Mastronardi Produce facility in Michigan.**

Sunset Mastronardi Produce is a third generation, family-owned greenhouse supplier in North America. The company grows, packages and distributes greenhouse-grown vegetables for major grocery retailers. With more than 60 years in the greenhouse industry, the company was seeing a yearly 15 percent growth and a steady decline in production capacity.

After the company started making roughly \$1 billion annually, company leaders realized that they were still running operations like a mom-and-pop shop. Carlos Collier, head of the continuous improvement team at Sunset, explained, “Our sales and marketing had outstripped our operational capacity to the extent that we were causing some self-inflicted wounds.”

In 2016 the company became interested in achieving operational excellence through lean methodologies and enlisted the help of the University of Michigan’s Tauber Institute for Global Operations Team program, which pairs a team of graduate students with a sponsoring company to complete a 14-week project that explores innovations in operations and manufacturing. The students then enter their results into an annual contest for the institute that awards students \$40,000 in scholarships.

This project focused on Sunset’s largest distribution center, a 380,000-square-foot facility in Livonia, Michigan. The team and the company wanted to make immediate improvements in customer service, product utilization and cost.

Three students, Eun Jung Shin and Vivek Vijayan, who both hold a master’s degree in supply chain management, and Maxwell Boykin, who holds a master’s degree in indus-

trial and operations engineering, partnered with leadership at Sunset to improve the quality inspection process and incubate a culture of continuous improvement across the company.

The Tauber team held three kaizen events in total: the first focused on the inspection process in the production area, or Zone 4; the second focused on inspection at the shipping docks; and the third focused on creating a robust training program for the inspectors.

For the first two weeks the team met with managers throughout the facility, interviewed employees and conducted time studies on the floor. One of the major issues the team discovered was in Zone 4, where there were too many inspection points intermittently dispersed throughout the facility. This was causing 67 percent of the total facility rework and was costing the company an estimated \$500,000 a year. The team decreased the areas of inspection and moved some of the process upstream.

Boykin said that this made it easier for Sunset to allocate its inventory based on quality, catch problems early and provide more of an incentive to get produce out the door sooner. The production lines that were restructured decreased their rework rate by 79 percent.

The second kaizen event focused on standardizing processes in the shipping area. The inspectors who remained in the shipping area had to perform a few steps before sending the final product to its intended customer. Incorrect product labeling, pallet positioning and a general lack of standardized processes led to late product deliveries and more rework. Through using spaghetti diagrams to eliminate excess motion, painting visual aids on the facility floor to organize the pallets and implementing a system for troubleshooting, the team eliminated over-processing, saving the company upward of \$242,000.

As the team looked at the first two kaizen events, the members realized that no matter where the inspection process was happening, it was flawed because every inspector did his or her job differently. Boykin said that each inspector was trained by another inspector through a “shadowing” process, and there was no central standard process for inspections.

“[This led] to irrational decision-making, which isn’t the inspector’s fault. It’s the system’s fault,” he said.

This prompted the third kaizen event, which focused on creating a robust training document for inspectors. The team implemented a new program where an experienced employee, called a “learning partner,” is trained by the department supervisor to serve as a mentor to the new hires for two weeks. This aims to provide a network of support for the trainee and ultimately lead to a lower turnover rate. Collier said that this kaizen event has since inspired an overhaul of the company’s recruiting, interviewing and onboarding processes.



Maxwell Boykin (from right) and Vivek Vijayan interview an employee on the production floor.

Over the 14-week period of kaizen implementation, the company saw an initial cost savings of approximately \$368,000 and roughly 28,348 hours in time savings.

“All these numbers are great ... but something that I think is really important is that we were able to teach a lot of employees metrics that they [otherwise wouldn’t have known] because they didn’t go to college or high school or it had nothing to do with their job,” Boykin said.

Allowing employees to take days out of their work schedule to pitch ideas for improvement and be a part of the process helped them feel like their talents were being valued at a higher level, Boykin said.

Collier said that one of the big benefits of having the Tauber team was that the members were a reality check. The company had many processes in need of improvement, but for a 14-week period, Collier still sees the impact.

“I have people who never heard of kaizen or lean participate in these events with the Tauber team, and now almost a year later they’re still talking about it and wanting to know when the next one is,” he said.

As the head of continuous improvement at Sunset, Collier said his plans for the future are to develop the company mindset toward a more lean-thinking culture, and “getting the entire plant on that type of wavelength is the next step,” he said.

— Cassandra Johnson

### Spread the news

If you have been involved in implementing a project and can share details, we’d like to interview you for a case study. Contact Web Managing Editor Cassandra Johnson at (770) 449-0461, ext. 119, [cjohnson@iise.org](mailto:cjohnson@iise.org).