

# Case Study

## SOLUTIONS IN PRACTICE

### Journey to optimization

Even for a company that's been in business since the end of World War II, the rough waters of the contemporary economy can prove difficult. But such troubles can reinforce the need for a companywide production conversion to lean manufacturing. This was the coincidence for WIKA Instrument Corp., a German-based company that produces pressure gauge, sensor and temperature instrumentation technology and applications. For nearly a decade, WIKA has devoted its 210,000-square-foot facility in Lawrenceville, Ga., to gauging its own business pressure and transforming itself into a sustainable operation through what company executives call a "lean journey."

"We were a \$100 million company until everyone was hit hard by the economic downturn," said Klaus Gross, chief operation officer for WIKA. "But we're adjusting to the new level and maintaining our lean journey. There are things we know we do very well and things we'd like to have more efficient, so we can stay ahead of the game."

In 2001, WIKA's management team visited a customer in North Carolina that was holding a weeklong event focused on the practice and benefits of lean manufacturing and, more specifically, kaizen. An eye-opening event for the managers, Gross said they returned to Georgia knowing how they needed to go forward and be more efficient, proactive and cost-effective throughout their operation.

"One of the triggers that we actually did was a continuous discussion every



Employees work within U-shaped manufacturing cells that include all necessary production tasks at the Lawrenceville, Ga., facility for WIKA Instrument Corp.

Monday among our management team. We talked about late orders that had been increasing, on-time delivery is not where it's supposed to be, things are getting too expensive, the quality stinks, ...back orders were starting to grow and we don't have our whole production or operation under control."

Gross added that management and the 500 employees working in the facility were often dealing with constant growing pains – always playing catch-up and adding new customers at the same time. Efficiency issues are sometimes common among companies experiencing growth like WIKA had as they moved into the 21st century. Gross said that the company had to hire a lot of people, accepting that new employees would tend to make more mistakes than seasoned employees. But the management believed WIKA was in a constant spiral and needed to get out of it before the overall efficiency started to deteriorate.

### Theory vs. practice

Lean wasn't a completely new concept to Gross, who has a degree in industrial engineering and wrote a thesis discussing lean and just-in-time production.

"One of the things I thought was missing was the link between the theory and the [practical application]," Gross said. "Once I found that missing link, I understood the theory more and could practically apply it to the real world. ... In Germany, we call it the 'a-ha' effect."

Gross added that managers didn't want to devote too much time to planning. They also believed that what they learned in North Carolina about lean and kaizen would yield their expectations – productivity gains, shorter lead-times and less inventory.

"There wasn't really a planning phase except to say, 'How do we make this work?' We brought guys in from TBM Consulting and said, 'This is what we want to do.' ...TBM pretty much put together a business case and said, 'This is

what you can achieve. Are you willing to do that? It's going to be painful.' We said, 'We have done the old way for years and years, and we talk about the same frustrations all the time, so let's do it.' That's one of the things that I would describe as our planning piece, a minor activity where we saw the benefits and said, 'Let's try it. If we fail, we fail, but we have to try it first.'

WIKA began its lean transition in 2001 focused on manufacturing, so as to prove to the facility work force that lean does work and will work for the overall operation. Gross and other managers selected important manufacturing cells – “those creating a significant amount of revenue” – and altered the production flow. What was once several 40-yard manufacturing lines quickly became U-shaped manufacturing cells that eliminated walking, work in progress and double and triple handling. This transformation occupied almost the entire first two years, but the new cells allowed for more tasks such as welding, leak testing, soldering and assembly to be accomplished at each one rather than a single task per factory line.

The changes being made at the time, Gross said, were daunting on some employees. For example, the first two or three weeks included a comfort adjustment for employees who were used to sitting in a chair most of the day, if not all day. Suddenly, the chairs are removed and their normal workspace has been changed. But they are enabled to perform three or four operations, which they weren't used to doing before. Though it was a grand change, the new cells were quickly adopted by employees. Gross said floor workers recognized early on that doing more manufacturing steps actually enhances their overall workday,

while any complaints about the removal of chairs appeared to be minor.

“They really saw that the management was on the shop floor almost every day, so they could see that the management was standing fully behind them and behind the change (to lean manufacturing).”

### The last moves

In its nine-year lean journey, WIKA's staff has seen results flourish, and they rest a little easier knowing they have an ongoing formula to maintain its survival amid an uneasy global economy. Among its improvements, the company has had a doubling in sales revenue in the last seven years, a nearly 80 percent cut in industry lead-times, a 20 percent space reduction and a 30 percent jump in productivity improvements. The facility has also managed to add about 40 new product configurations daily, though Gross said WIKA can produce 200 million variations for its customers.

“One of the things we also did was doubling the sales and maintaining the same amount of inventory,” he added. “It is one of the things that hasn't been mentioned much because we still believe we can improve in our inventory numbers. We have been able to keep our inventory at the same level, but we can still double our sales.”

He also described a point of no return in WIKA's lean transformation: moving “furniture.” Gross advises companies that are considering a lean journey to remember that once “furniture” is moved around, there is no way back.

While success has appeared on the shop floor, WIKA managers have also looked at applying kaizen to its front office business processes. One of the

major challenges, Gross said, was in showing office personnel what would be its version of “moving furniture.” He added that kaizen events in the office are at least twice as difficult as on the manufacturing floor, but over time 64 percent of the facility work force have participated in a kaizen event and five employees have become devoted to what management calls the KPO – Kaizen Promotion Office. The KPO has slowly grown in number based on the expected needs of those tasked with monitoring and developing solutions for continuous improvement.

“I said early last year that I want to have a full-blown, five-day kaizen event twice a year in every manufacturing cell,” Gross said. “It is an expectation I have and I put it out there to our continuous improvement group, and they're swallowing this expectation right now. When we make the people the resources we need to provide such service to operations and manufacturing, we don't need to hire another five or six people from the five we already have working on continuous improvement right now. The expectation is out there, and we're making it work.”

— David Brandt

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