

SPECIAL REPORT: LESSONS LEARNED FROM PHARMA INDUSTRY IMPROVE FOOD SAFETY

February 2013 | www.foodengineeringmag.com

FoodEngineering

THE MAGAZINE FOR OPERATIONS AND MANUFACTURING MANAGEMENT

Continuous Improvement

Engaged staff equals
better performance



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Virtually every manufacturer with a business continuity plan wants to improve continuously, including in the way it approaches continuous improvement.

► **Kevin T. Higgins**, *Senior Editor*

Like motherhood and love of country, continuous improvement is a concept that demands support. None dare speak against it; all are obliged to sing its praises. But actually having an effective continuous improvement program is another matter. Maintaining previous gains while moving the bar higher is one of manufacturing's greatest challenges. It requires structured

approaches and buy-in from an organization's entire staff. Further complicating the challenge is the transition to a new generation of workers who chafe at a top-down management approach.

Between black belts, kaizen events, high-performance work systems and lean manufacturing initiatives, continuous improvement has no shortage of structured approaches that can be mixed and matched. Buy-in is the wild card in

program success. Never easy to achieve, it likely will become harder in the coming years.

“Anybody under the age of 20 has a very different view of data and information than people in the current workforce,” observes John Oskin, founder and CEO of Sage Clarity Systems, Chicago. The presentation of and access to data from the corner office to the shop floor is changing, though “the future is not about top-down vs. bottom-up initiatives,” he says. Instead, it is about engagement and involvement in achieving improvements that can be financially quantified.

When Oskin asked manufacturing professionals at a lean conference if their companies had a formal continuous improvement program, every hand went up. He then asked who had goals and targets, and four out of five participants raised their hands. Asked if the program was measured with hard dollar savings, only three out of five hands were raised. Only two out of five indicated their continuous improvement focus had a formal organization with dedicated rates.

The energy and execution of effective continuous improvement bubbles up from the plant floor, but setting goals and expectations must come from the executive suite. If top management lacks the will to change a company’s culture, the tools of change will not be used effectively. That was the experience at Glanbia USA, a division of Irish dairy conglomerate Glanbia plc.

CPR for TPM

In 2004, managers from four Glanbia facilities were dispatched to the Lean Learning Center in Novi, MI to lay the groundwork for a lean manufacturing initiative. The early results were positive, but after a few years, the initiative faltered. The experience mirrored that of other food companies where lean was approached as a manufacturing exercise rather than an enterprise-wide effort.

Continuous improvement received new life in 2010 with the hiring of John Mutchler, whom one colleague referred to as “the god of TPM” (total production maintenance). As executive vice president, Mutchler was able to impose the necessary structure and make the difficult calls to resuscitate the program.

Speaking at *Food Engineering’s* 2012 Food Automation & Manufacturing Conference, Mutchler identified supervisors who did not know how to listen to workers as a basic impediment to positive outcomes. The systems he inherited “were built on command and control,” and tearing down that



model resulted in the loss of managers who couldn’t adapt to the Glanbia Performance System (GPS) he developed. “If the tool is right, we use it for GPS,” which is built on safety and quality, focused improvement, early management involvement, training and development, and progressive maintenance, Mutchler said.

Once personnel are motivated to change unproductive practices and are armed with the necessary technical skills, lofty goals are in order. “If you’re not seeing results in the first few months, you’re in trouble, especially at the operator level,” he said. He estimated the initiative saved \$11 million at three Idaho plants within two years, though Mutchler believes employee engagement and improvements in safety and quality are more meaningful for long-term success.

Mutchler is an adherent of ADKAR, a change management model that emphasizes both the business and people dimensions. The acronym’s five elements are awareness of the need for change, desire to make it happen, knowledge of how to change, ability to implement new skills and behaviors, and reinforcement to ensure changes stick.

Another framework is operational excellence, a strategy developed by consultant Kevin J. Duggan, founder of the Institute for Operational Excellence in North Kingstown, RI. A disciple of lean and Six Sigma, Duggan believes those tactics will only yield one-off improvements unless they are geared

► Instead of static displays, digital overhead monitors need to be dynamic and transparent communication media, relaying information from both supervisors and line workers.

Source: Sage Clarity.



► Automated process flow makes continuous improvement a data-crunching challenge for food manufacturers.

Source: Siemens Inc.

toward growing the business. Instead of focusing on value streams and continuous improvement, he advocates designing around the desired outcome and the specific steps to reach it. “We should design the operation to run in a certain fashion and then provide a checklist to optimize the performance of the design,” Duggan writes in *Design for Operational Excellence*.

“The myth of improvement is that it’s a continuous journey of finding and eliminating waste,” he adds. Lean, Six Sigma and 5S are valuable tools, “but those are pieces to a puzzle,” says Duggan. “If you know what the puzzle will look like at the end, it is much easier to piece together.”

Smartboard this!

Continuous improvement programs require strong leadership and management energy. Even if both are present, the best possible outcome is a never-ending cycle of incremental improvement and monitoring to ensure it is sustained, he argues. Duggan champions an eight-step approach that serves as a road map “to achieve a self-healing flow and lets people see the flow.” His visual factory includes both static visuals

depicting “the design at rest” and dynamic indicators of real-time flow.

A more literal take on the visual factory is provided by Sage’s Oskin. Building on the Toyota Production System problem-notification system for management, maintenance and others when quality or process problems occurs, he bundles overhead plant floor displays, HMIs, email and SMS messaging in a system he calls “next generation Andon.” Flat screens that display production data are becoming common in food plants, but they often present static information. “We advocate rotating displays and giving operators Andon call buttons to initiate an email alert, instead of relying on a manager to send an email,” explains Oskin.

Another tool in the democratization of information is the Factory Media Center, a 90-in. touch screen display that combines interactive data with Smartboard technology. “It’s not a management tool; it’s an operations tool,” he says. It increases manufacturing flexibility, and challenges the belief information is power that must be hoarded, by instead making it readily available to front-line workers.

“This is a bleeding edge concept, and not every company is ready for it,” adds Oskin. A major beverage manufacturer “built a room for the technology, where an operator with some quiet time can go in and play around with electronic fishbone diagrams,” he says. “They actually run their continuous improvement on that device.”

Oskin began his career at General Electric, where he helped drive manufacturing excellence. His tenure predated Jack Welch’s unleashing of squadrons of Six Sigma black belts on the organization, though he strongly endorses the methodologies and metrics used by those improvement specialists, especially overall equipment effectiveness (OEE). The ability to collect and report OEE data to drive continuous improvement was a focus of his software firm, Informance International (the software portfolio was folded into Epicor Software Corp. last year). Automated data collection remains one of the keys to improved operational performance. Among the firms helping carry the torch is InfinityQS International Inc.

InfinityQS positions itself as a provider of quality management systems, though a black belt is likely more comfortable than a quality assurance professional working with the SPC data generated. “SPC

data is our core, but we have expanded to many more data sources and its collection over the years,” says Jude Holmes, an applications engineer at the Chantilly, VA-based software vendor. Recent improvements are designed to present data in formats comfortable for generalists, but an engineer with a strong statistics background will derive the most value from the root cause analysis and data extraction from ERP systems.

“The whole goal of the software is to drive continuous improvement based on the data,” Holmes continues. “You can slice and dice any way you want or extract information for detailed analysis.” Besides beefing up its OEE capabilities, the firm is adding options for the collection and analysis of production data, with mobile devices and cloud-based solutions part of the mix.

Effective improvement programs require continuity in both effort and people. Lack of staff continuity is improvement’s Achilles’ heel, suggests Darryl Wernimont, marketing director at Hailey, ID-based POWER Engineers Inc. Citing US Bureau of Labor statistics, Wernimont points out wage and salary workers average 4.4 years’ tenure on the job. “When you take into consideration this level of employee turnover and add in company downsizing, the challenge of establishing, educating, training and maintaining a team focus on continuous improvement becomes far more difficult,” he suggests.

A blend of in-house resources and outside specialists may be the solution. These specialists would “focus on specific areas and drive short-term changes that ultimately create long-term improvement,” he explains. “Using outsourced technical resources that have specific focus should allow the internal members to counteract turnover and retain continuity while helping drive long-term results.”

Hired guns are a practical answer to staff turnover, though the people who work day in and day out in the plant and recognize where waste and inefficiency occur are the best resources. Whether an organization chooses to augment in-house capabilities or train and support the team it has, continuous improvement requires an organized, sustained effort. After all, if a better way of producing better products were obvious, the organization would already be doing it. ♦

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