



A process improvement board can be beneficial to continuous improvement efforts. Courtesy of Modern Litho.

The Path to Continuous Improvement

Print executives share the benefits and challenges of implementing CI initiatives.



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Athletic coaches may get fired for not winning enough, but often a stated reason is that the team wasn't improving. Or, perhaps more accurately, wasn't improving fast enough to succeed against opponents that were also getting better.

In business, continuous improvement (CI) is a concept predicated on the belief that while all organizations naturally learn to perform better over time, structure and processes can be put in place to increase the pace of that improvement. Over time, the speed at which one printing company improves can outpace and create competitive advantage against its competitors. The precise reasons for that advantage — manifested in quicker turnaround time, less waste and cost, better customer loyalty, and other measures

— can be invisible to outsiders. Thousands of subtle improvements roll up into a major advantage.

There are many approaches that can be the foundation of a CI effort: lean manufacturing, ISO 9001, Six Sigma, CI teams, etc. They all provide tools and methods that can yield real gains in quality and productivity. In printing and converting, a common choice is lean manufacturing, an approach evolved from Toyota and built around principles of defining value from the customers' perspective, reducing non-value-adding activities and work-in-process inventory, and improving flow. While companies most often start by devoting attention to the production area, it's crucial to think of CI as a central strategy for the entire organization.

Companies that successfully make continuous improvement a key strategy develop a culture that engages employees. They have a higher-than-typical percentage of employees that buy in to the mission and values of the company, understand how their activities contribute to achieving company goals, and feel supported and valued. Engaged employees are rarer than leaders think — Gallup's 2018 Survey of Employee Engagement revealed that only 34% of U.S. workers were classified as engaged in their work and workplace. An engaging culture inspires employees to contribute ideas that make processes easier, faster, better, or cheaper.

Systematic continuous improvement is hard work and there has to be a strong reason for company leaders to undertake it. It will take executives out of their comfort zone as they educate themselves about CI and lean manufacturing and learn that they may have to change their management style, moving from telling people what to do to coaching people to identify and solve problems. They will have to spend more time in work areas supporting employees and figure out ways of tapping the potential of their employees to improve the operation. On top of that, standards need to be developed for work processes, workplaces made cleaner and more orderly, key metrics identified and tracked, investigations pursued when rework or complaints occur, and communication improved. Yes,

In addition to CI Ready!, a virtual conference hosted June 15-19, PRINTING United Alliance has many resources to help companies with CI, including year-round webinars and newsletters. Visit ci.printing.org for more information and save the date for next year's Continuous Improvement Conference (April 18-21; Columbus, Ohio).

continuous improvement efforts can reduce chaos and deliver substantial financial benefits, but it takes serious effort to start and sustain.

The annual Continuous Improvement Conference presented by PRINTING United Alliance brings together companies and executives that not only realize the need for ongoing activities to improve their operational performance, but more importantly recognize the need to make those improvement activities more effective. Some companies in attendance have been refining their CI strategy for years. Shedding light on CI's importance and benefits are three conference attendees, as well as the conference's long-time consultant:

- Tom Staib, president of DWS Printing Associates, a medium-sized label printer and converter in Deer Park, N.Y.
- Jim Tomblinson, VP of operations of Modern Litho, a large commercial and publication printer in Jefferson City, Mo.
- Dean DeMarco, division print and technology director, IDL Print, a large producer of point-of-purchase

(POP)/point-of-sale (POS) displays in East Butler, Pa.

- John Compton, principal of Compton & Associates, Lean Six Sigma Master Black Belt, and consultant that helps plan the Continuous Improvement Conference.

Catalyst for Starting a CI Strategy

Like an alcoholic whose life is in shambles before recovery, the decision to pursue CI can be made in an attempt to save the business. In other instances, it is done at the insistence of a major customer or parent corporation. Most impressive is the company that commits to the strategy when things are going well. Staib of DWS Printing Associates attended the conference a decade ago and was inspired by a desire to improve efficiencies, minimize waste, and increase profitability. Modern Litho committed to CI on the heels of the ▶

The before and after of a 5S (sort, straighten, shine, standardize, and sustain) lean organization method implementation.

Courtesy of Compton & Associates.



Examples of Waste in Production Area

- Waiting for substrates/inks/other consumables
- Waiting for files/screens/plates
- Job pulled – machine can't run job
- Printed material has quality problems
- Defective or incorrect screens/plates
- Job scheduled for production but not ready to run
- Searching for work in process (WIP)
- Moving WIP around
- Equipment breakdown
- Poor communication
- Waiting for a decision
- Job pulled to run another
- Job information incomplete/incorrect
- Jobs run slower to prevent quality problems
- Looking for missing tools

worst year for waste in the company's history. Its rapid growth meant hiring many with little or no print experience, and weaknesses in its processes, training, quality control, and communication were exposed. DeMarco reports that IDL Print's prior attendance at the conference caused the company to realize the value of CI and begin taking implementation steps before its parent corporation developed a lean-oriented managerial approach for all its manufacturing divisions.

Compton points out that the primary motivation for most companies is the desire to achieve a strong competitive position. "This is achieved by providing increasing value to customers over shorter lead times consuming fewer resources," he says. "It requires a business strategy based on continual improvement of people, processes, and product."

CI/Lean Tools and Concepts that Have Proven Beneficial

Each of the companies has made use of 5S, a lean organizational method based on sort, straighten, shine, standardize, and sustain. It's a great place to start improvement activities since 5S eliminates waste and improves

flow. In the absence of a clean and organized workplace, employees waste time looking for tools, tasks take longer, and abnormal conditions go unnoticed. 5S also gets workers to observe their own work practices and think about why and how they take certain actions. IDL Print sustains its 5S program by requiring each department to turn in a weekly self-audit 5S score.

In addition to 5S, DeMarco has set up a measurement system at

IDL Print based on safety, quality, delivery, value (SQDV) boards. One key metric is tracked in each category on boards specific to the division and each department. For example, the division-wide measure for value is material cost as a percentage of the job, with a goal of trending below 28%. The company routinely uses multiday improvement projects ("kaizen" events) to reduce waste in certain processes.

Tomblinson's company uses an employee improvement board to recognize employee ideas and monitor each idea until completed. Staib shares that DWS teaches and reinforces the 8 wastes (motion, transportation, inventory, etc.) with employees and does weekly "gamba walks" on the plant floor. These structured management visits to each department ensure that management understands what issues workers are having in each area, provides support in overcoming challenges, and gathers improvement ideas.

Involving Employees in CI Efforts

Compton emphasizes that no successful CI initiative has ever been achieved over any reasonable period of time without the direct involvement

of all employees. The waste and inefficiencies embedded in processes is seen and understood most directly by the people that do the work. He stresses that companies can buy the same equipment, technology, and raw materials, but the internal capability of a company to drive improvements can't be duplicated by competitors.

Staib heads a CI team that consists of department heads and managers and holds weekly CI meetings. The agenda varies depending on the initiatives at hand, however the team discusses lean tools and tries to foster ways to minimize waste, reduce defects, and maximize productivity and efficiencies, which in turn, helps increase profitability. Companies learn which CI techniques work best for it. In recent years, DWS had a "What Bugs You?" campaign in which employees were encouraged to submit ideas on how to fix problems directly affecting them. The program gradually lost momentum.

In the last quarter of 2019, DWS launched its "100-Day Sprint" program. The company has been separated into four teams with each responsible for tracking and responding to customer complaints resulting from the team's work. The intention was not to point fingers, but to help employees understand the nature of complaints and have teams take corrective actions to prevent recurrence. A scoring system has created a fun sense of team competition. Weekly team meetings discuss the root cause of complaints, prevention steps, and team standings. The winning team is honored at a quarterly all-staff meeting. The company payoff? Complaints have dropped considerably.

There's a concern among some employees that implementing lean will cause job losses or less overtime. To counter that, Staib reminds employees that to protect jobs and grow wages the company must do everything possible to contain costs. The goal is growth, not staff cuts. Creating a similar mindset among staff, IDL Print doesn't use the term lean with its employees, instead calling it "intelligent manufacturing." Other companies talk to employees ▶

The 8 Wastes

- Defects
- Overproduction
- Waiting
- Non-utilized talent
- Transportation
- Inventory (excess)
- Motion
- Extra processing

about trying to make their jobs easier (“work smarter and not harder” is Modern Litho’s theme). Companies intent on implementing a CI program must explain the reason for it in a way that inspires employees to participate.

As CI becomes embedded in the culture of a company,

it may make participation an expectation of employment. At IDL Print, employees must contribute improvement ideas every quarter and participate in at least two improvement projects annually.

Changing How Managers Think and Behave

Managers accustomed to a command-and-control type of management need to change their approach in a CI environment. Since the greatest potential for accelerating improvement rests with hourly employees effectively using the tools of CI, managers and supervisors must develop the ability to coach employees in learning and applying the tools, techniques, and importantly, the thinking that drives CI.

Each of the aforementioned company leaders say how imperative it is for managers to engage employees in CI initiatives. As employees become excited about the opportunity to contribute ideas and participate in improvement activities, other employees are drawn in. It may take time, but there are plenty of stories of shy, reticent employees becoming enthusiastic contributors with great ideas.

At IDL, managers are trained in the corporation’s management system and, to be certified, must develop and lead an improvement project that saves the company at least \$50,000 per year. Certified individuals are then expected to lead at least one kaizen event per year.

Benefits

Staib is confident of the benefits that have resulted from the company’s CI efforts. “The benefits are quite visible. Complaints are way down, meaning quality and delivery times are improving,” he says. “Waste and efficiencies are tracked through KPI evaluation. And, most importantly, profitability is up.”

Tomblinson points to sizeable waste reduction. A benefit of 5S, he says, is that Modern Litho’s facilities are always tour-ready for customers.

DeMarco said that IDL Print’s CI initiative is at least partly responsible for customer satisfaction scores that have risen markedly. Expedited freight expenses have dropped by 85% over four years despite the division maintaining a high on-time delivery rate. Safety goals are being met and the spoilage rate is a fraction of what it was at the program’s beginning. He calculates that the company saves \$150,000 for every 1% drop in material spoilage.

Assuming the CI program involves all employees and that the program is actively led by top management, Compton expects companies to see improvement in safety, quality, cost, delivery, and reduced inventory.

One Piece of Advice

There is clear unanimity among the company leaders that senior managers must be all in and unified in their commitment. In small-to-medium-sized companies, a senior executive will typically be the one leading the implementation. Larger companies may have a CI manager, but even then, a top manager must set priorities, constantly reinforce the “why” of CI, share updates with staff, and step in when challenges occur.

“Get started now! Don’t wait any longer,” says Compton. “If there was a better way to raise quality and productivity, companies would have discovered it. If you are already practicing CI, work to double it in a year and double it again the following year. The only real competitive advantage you have is your ability to improve your people, processes, and products faster than the competition.” ■

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Tools sorted and organized as a result of the 5S method.

Courtesy of Compton & Associates.

