

# Jump Start Continuous Improvement In Your Printing Operation

Like most production industry leaders, you're well aware of the benefits derived from an operation running on Lean manufacturing principles. The thought of a clean, organized facility with streamlined throughput producing high-quality output at reduced cost makes your mouth water. And with Lean philosophies serving as the foundation for continuous improvement, you understand that it's "the gift that keeps on giving." So there's really just one question—**Why haven't you started?**

## The Lean Dilemma

Let's face it, just knowing the potential benefits of any initiative is not always reason to jump in with both feet. And when you consider what it means to be a truly "Lean" operation and all that entails—achieving buy-in from upper management as well as the employees who will be following the new SOPs; the shift in your company's culture; the time investment for both Lean training and learning new ways to handle your day-to-day operations; the capital needed to start basic Lean initiatives—it's all too easy to become discouraged and decide "the way we've always done things has worked, and there's no real reason to change."

**Do not be discouraged. You can achieve the vision for your ideal operations.** And the solution is simpler than you think. Read on to learn how to give Lean a foothold in your plant that will lead to a chain reaction of improvement initiatives.

## The Lean Solution

Yes, the idea of instituting plant-wide Lean initiatives—from prepress to the press-room to the bindery and beyond—can be daunting. It's times like these when it's important to step back, take a deep breath, and remember the overriding principles of Lean manufacturing in the first place—the elimination of waste. **Lean isn't about "big."** It isn't about "creating" and "installing." **It's all about reduction.** Yes, a plant running entirely on Lean manufacturing principles is a fine goal, but reaching that goal is a lot like eating an elephant. And while we all know the way to eat an elephant is "one bite at a time," it's still all too easy stay focused on the big picture and pay less attention to those "first bites."

**Don't fall into that trap!** Those first few bites can make all the

### Eight Sources of Waste

- 1. Overproduction:** Producing more than the customer demands.
- 2. Inventory:** Raw materials, finished goods, and work-in-process inventory.
- 3. Overprocessing:** Producing products that use more resources than the customer demands.
- 4. Motion:** Using more motion than necessary to produce the product (i.e., movement that adds no value to the product).
- 5. Defects:** The traditional source of waste—product that cannot be used.
- 6. Waiting:** Production downtime.
- 7. Transportation:** Moving the product when it adds no value.
- 8. Underutilized Resources:** Human or technological resources that are not fully engaged.

difference in whether your Lean story is a success ... or if you're digging through cookbooks to find recipes for thousands of pounds of leftover elephant.

## ISLANDS OF EXCELLENCE

Rather than trying to start something like a plant-wide 5S initiative in the first month, it is usually much simpler to implement it in one or two areas. **These areas become “Islands of Excellence” (IoE) and the future models for your entire company’s Lean program.** IoEs can be a fantastic means of jump-starting Lean initiatives because they are easier to establish; they cost less in terms of initial investments of time, training, and materials; and when run properly, they create a “buzz” and **a positive example for the rest of the firm to follow.**

Chris Illa, operations manager and continuous improvement manager for Japs-Olson, used the IoE approach to great effect when his company decided to “go Lean” in 2005. Japs-Olson operates from a 500,000-square-foot facility with approximately 800 workers. It offers printing and mailing services, including prepress production, variable-image printing, lettershop services, data processing services, commingling, and direct mail fulfillment, all of which are completed in-house.

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“We had an area—our imaging department—that we knew was going to relocate in the plant due to an expansion,” said Illa. “So, prior to moving it, we did a small 5S and standard work kaizen to identify how the new workstation would optimally be set up.

“At the time we had about 16 machines, and we started with a pair of them. That’s all we did. Then we made sure to sustain those efforts for a few months to show people concepts like 5S labeling, shadow boards, floor markings, and staging. Once we did that and we were able to sustain it on a small scale, we were eventually able to establish a ‘larger island’ that went on to encompass all of the machines in the new area.”

Naturally, when you’re dealing with the square footage, number of employees, and variety of services of a company the size of Japs-Olson, the IoE approach seems obvious, but **the same principle can easily be applied to any printing firm,** regardless of size.

## WHERE TO BEGIN

First and foremost, it’s vitally important to make those managing the change and those participating in it aware of just what Lean is and **what you expect from pursuing this course of action.** If people don’t understand the reasoning behind this shift in focus, it will be that much harder to sustain in the long run. **A small investment in training right off the bat can keep a Lean initiative from derailing two or three months down the line.**

“At first our approach centered on training,” Illa explained. “We had to train the trainers and teach Lean principles to our leaders. We had to educate everybody. It was only after we did that, that it was possible to move forward with kaizen and 5S activities.”

For many printers, **the temptation will be great to jump right into the pressroom.** However, according to Illa, discretion may be the better part of valor when it comes to tackling the heart and soul of your operations.

“I would avoid the pressroom,” Illa cautions. **“It’s a struggle to start in the pressroom because of the sheer magnitude of it.** It’s just so daunting.”

Instead, **Illa encourages printers to focus their early efforts on the bindery.** “In a general commercial printer, a folder or cutter would be a great place to start,” Illa said. “In my opinion, a folder would work particularly well because you’ve got things such as collars and score wheels that you organize and get under control. There are a lot of tools needed to set out, and there’s a lot of opportunity for setup reduction activities.”

Other key areas of opportunity would be the mailing department, or, like Japs-Olson, the imaging department.

If you absolutely must take on the pressroom first, it is vitally important to **limit your scope** out of the gate. Don’t try to do it all at once. If you have multiple presses, pick one and make that your focus. Also, don’t try to incorporate every item in your Lean toolkit right away. You’ll experience far more success if your initial kaizen event focuses solely on 5S, rather a combination of 5S and standard work, for instance. Do what you can to **ensure success in small steps** rather than becoming overwhelmed in the early going. If you can sustain 5S for two or three months, then establishing standard work will be that much easier. And once you’ve sustained both for an appropriate time on one press, you will have an established, successful blueprint for tackling the next press or piece of equipment on your shop floor.

## How to Begin

As you may have already gathered, **5S is an ideal tool to use in your initial Lean efforts.** While any Lean tool can produce positive results, 5S serves not only as the foundation for most successful Lean initiatives, but it’s also one of the most visually striking and impressive measures you can take when employed correctly.

“Honestly, when you look at some of the basic parts of Lean, you can write down standard work procedures and map your value stream and things like that, but **the driving motivator for the vast majority of our employees was that they wanted a clean work environment.** That far outweighed anything else,” said Illa of the use of 5S in Japs-Olson’s Lean transformation.

## Your Lean Toolkit

The following are some of the more common Lean tools to consider employing in your printing operation.

**5S:** The foundation for many Lean initiatives includes Sort, Straighten (or Simplify), Scrub (or Shine), Standardize, and Sustain. Many Lean practitioners add a sixth S—Safety.

**Kaizen:** Continuous, incremental improvement of an activity to create more value and less waste. “Kaizen events” refer to team approaches to quickly tear down and rebuild a process to operate more efficiently.

**Poka-Yoke:** A mistake-proofing device or procedure.

**Single Minute Exchange of Dies (SMED):** A series of techniques designed for changeovers of production machinery in less than ten minutes.

**Standard Work:** The most effective combination of manpower, materials, and machinery.

**Total Productive Maintenance:** A series of methods ensuring that every machine in a production process is always able to perform its required tasks and production is never interrupted.

**Value-Stream Mapping:** Highlights the sources of waste and eliminates them by implementing a future-state value stream that can become reality within a short time.

**Visual Control:** The placement in plain view of all tools, parts, production activities, and indicators of production system performance so everyone involved can understand the status of the system at a glance.

And really, that's the beauty of starting small and starting with 5S. Properly sustained, those employees working on that initial IoE will develop **a sense of pride and ownership** in their area or their particular piece of equipment. Ideally, that will in turn become a point of envy for other employees in your plant. That was certainly the case with Japs-Olson:

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“There was definitely a motivating factor for those employees who saw the resulting clean, organized environment,” Illa said. “Before long, you were hearing people ask, ‘Hey, when are you going to get to us?’ So, as it caught on, there was a big push for other managers to get those 5S procedures working in their areas.”

And from a management perspective, what's not to like? **Managers are likely to see results right away.** There will be less work-in-progress on the floor. Employees will be at their workstations rather than wandering about looking for tools. The result will be **an increase in productivity.** These are the results you're looking for, but you have to remember that this is only one small, early step in your Lean journey.

## THE BOTTOM LINE

It's important to remember that, while Islands of Excellence can be a great tool for building interest and establishing a foothold for Lean manufacturing, one of their greatest benefits is the ability to offer **a proof of concept to upper management** and secure their support moving forward.

“It's about proving that an investment of time, materials, training, tools, and equipment is going to pay off,” said Illa. “If you take the ‘islands’ approach, you can have a relatively small investment, but you have to make sure your metrics are in line so that you can prove that your efforts have been worth it.”

Ideally, your printing plant already maintains thorough production records. If not, now is the time to start. By using an initial IoE, you should have an easier time documenting all of the relevant metrics for that particular area or piece of equipment.

Remember, **if you're not measuring your production output, there's no way of showing improvement.** If your documentation methods aren't up to snuff, take this as an opportunity to create a “metrics” island of excellence as well (See sidebar on page 5).

“After an initial investment of money, tools, time, and training, if you can show something like a 10-percent gain in productivity, that can be extrapolated over years—and that's definitely something that helps sell Lean to management,” Illa said.

But, on the other hand, if you choose to start out on a grander scale, the capital investment and the time it takes to properly implement the change will be that much greater. And then what? Success is still a possibility, but the pressure to perform is that much greater—especially if you estimate seeing appreciable benefits in an overly optimistic timeframe.

“The challenging part is patience and sustaining the change,” Illa said. “While the ultimate goal is to improve efficiency, the learning curve associated with taking on new procedures might mean quantifiable, positive results won’t show up right away.”

## You Can Do It

There are two easy traps many hopeful Lean practitioners fall into when they begin their journey. For some, their enthusiasm leads them into attempting to take on too much at once. And for others, the task of establishing a “completely Lean” facility seems so large that they never convince themselves to take that first step.

Either way, you **can** take that first step, and if you take it the right way, you can ensure the success of your continuous improvement goals as long as you:

- **Start small.** Pick a single department (or even a machine within that department), and focus your efforts there.
- **Train the necessary employees.** Make sure the affected management and employees understand Lean and the goals you have for taking on this project.
- **Use 5S.** Not only does 5S lay the groundwork for future Lean initiatives, but it’s also highly visible and can inspire other departments to request the same treatment.
- **Document the results.** Make sure you keep track of all necessary metrics for the affected area. If you can show quantifiable improvement from your small-scale efforts, future buy-in will be that much easier to secure.

## LEARN MORE ABOUT LEAN PRINTING

Printing Industries of America offers several publications specifically tailored to help printers incorporate Lean manufacturing best practices in their plants as well as the Continuous Improvement Conference—a conference dedicated to showing graphic communications companies how to establish and sustain Lean practices in their plants.

### Publications

[Lean Printing: Pathway to Success](#) explores 5S, setup reduction, total productive maintenance, building quality at the source, visual management, kaizen events, and value-stream mapping—all proven techniques for establishing more efficient, productive workflows.

## Measure It... Or Else...

As a frequent speaker at Printing Industries of America’s Continuous Improvement Conference, Chris Illa has had the opportunity to speak to several printers about their Lean initiatives. Illa related the following cautionary tale about a printer whose Lean efforts were nearly cut short almost as soon as they began:

*I talked to a gentleman who was told by his management that they were going to shut down the Lean efforts, and he called me in a panic. He said that management wasn’t seeing the benefits versus the costs. He had all of these external conditions that were hindering his improvements. And because they didn’t have good measurements on downtime and things like that, he couldn’t prove to management that improvement was being made, especially in the face of those external forces.*

*The fact of the matter was, the Lean initiatives he had in place were probably keeping the company from taking a larger hit than they were. Unfortunately, all of their timekeeping was manual and they didn’t have a really good reporting system to illuminate what was causing the downtime. The solution was to set up a better system of documentation, such as tick charts, run charts, and control charts.*

Long story short... for many people, your Lean efforts will only be as good as you can prove them to be on a spreadsheet. Make sure you’re properly documenting the success your Island of Excellence is producing—you never know when an unforeseen tidal wave could make it disappear...

[Lean Printing: Cultural Imperatives for Success](#) guides printers through the necessary changes they must make to their company's culture to ensure that the Lean initiatives they establish take root and continue to flourish well into the future. Specifically, the book examines the importance of proper leadership through the shift, how to build effective teams, creating a culture of empowerment versus control, establishing a mission statement to guide employees in all of their activities, and handling issues that may arise from your company's current infrastructure.

[Total Production Maintenance, Third Edition](#), helps printers develop, implement, and utilize a formal graphic arts technical system to accelerate production throughput while optimizing and maintaining the Total Production Maintenance (TPM) system. The book also features the same maintenance, calibration, and process control checklists used by Printing Industries of America in its internal TPM program.

To order these or any Printing Industries Press title, contact a Member Central Representative at 1-800-910-4283 ext. 770 or email [membercentral@printing.org](mailto:membercentral@printing.org). Visit the Online Store at [www.printing.org/store](http://www.printing.org/store).

### **Continuous Improvement Conference**

Printing Industries of America, in cooperation with The Foundation for Flexographic Technical Association, also conducts its yearly Continuous Improvement Conference, which is dedicated to showing executives and managers new ways to reduce costs and improve business performance, manufacturing, and customer satisfaction. In 2011 The Continuous Improvement Conference will be held April 10–13, in Kansas City, Missouri. Chris Illa, along with Kristine King, will be presenting a case study of Japs-Olson's Lean transformation titled, "Pulling It All Together."

To learn more about the Continuous Improvement Conference, visit [www.printing.org/ciconference](http://www.printing.org/ciconference).