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White Paper

Driving Lean through Your Supply Chain

The cultivation of a more efficient supplier network

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Introduction

Imagine that you own a local restaurant. Your signature dish, the Bistro Burger, just won the coveted “Best Burger in Town” award. You run a tight ship with great food, a well-trained staff and a welcoming ambiance. Business is good.

Despite your success, a few problems have come up. Your primary meat supplier is struggling to keep pace with demand for fresh Black Angus beef, and you've had to disappoint several hungry customers when you ran out. Your tomato supply — a key ingredient to the Bistro Burger — is spotty at best. It wasn't long before local burger aficionados (i.e., your best customers) took notice.

With supplier shortcomings like these, you wouldn't be surprised to learn that your reputation is eroding and you're losing business to the hot new restaurant down the road. No matter how good you are internally, the quality of your supply chain is vital to providing value to your customers. Long-term success requires that all links in your supply chain provide quality, consistency and efficiency.

Lean manufacturing operates in the same way. If lean efforts are confined within the walls of your plant, the success of the program will be limited. In fact, an organization can only become 25-30% leaner using in-house initiatives if its suppliers are not equally lean¹. To flourish, lean must be implemented enterprise-wide — including your supply chain.

In short, your lean efforts are only as strong as the weakest link. That's why it's time to ask, “Are the all links in my supply chain lean?” If you think the answer is “yes,” take a closer look.

While lean claims are now widespread, a recent study showed that only 40.5% of manufacturers have adopted lean as their primary improvement method². Another study indicated that lean adoption is 12% lower among process industries, such as injection molding, extrusion and film bags, than it is among discrete manufacturers such as circuit boards or fabricated sheet metal³. Why is this so and what can be done about it?

While it's impossible to force lean on the unwilling, you can make intelligent choices when selecting suppliers. This guide allows you to understand and evaluate suppliers by answering these questions:

- ◇ Why do I need a lean supply chain?
- ◇ Why are so many suppliers lagging in lean?
- ◇ What will I gain by choosing lean suppliers?
- ◇ What does a real lean supplier look like?
- ◇ How can I tell if a supplier is really lean?

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Manufacturing custom products on a mass basis requires that your suppliers be proficient in demand flow.

Why do I need a lean supply chain?

In the global economy, you often get a better deal by choosing suppliers in low-cost countries — assuming that *upfront cost* is your only consideration. Forward-thinking domestic suppliers combat this threat by using lean methodologies to define and maximize value from their customers' point of view. This could include services such as part design, ready-to-use components, shorter lead times, zero defect products and stockless production.

If lean is part of your company culture, you've probably seen what happens when suppliers fall short of expectations. While the parts may come cheap, they end up costing you more in the long run through wasted time, poor quality, excess inventory and other inefficiencies. On the other hand, lean suppliers eliminate waste and add value to give you the lowest *overall cost*.

Today's consumers, whether they're remodeling a kitchen, buying a laptop or ordering at Starbucks, expect customization in their lives. The trend towards "mass customization," or manufacturing custom products on a mass basis, requires that your suppliers be proficient in demand flow. Simply put, you need to implement lean throughout your supply chain — or risk becoming obsolete.

Why are so many suppliers still lagging in lean?

With more than fifty years since the introduction of the Toyota Production System and hundreds of success stories, lean has proven itself effective. So why are almost 60% of manufacturers still not implementing lean? There are three key contributing factors: (1) lack of company leadership and initiative; (2) lack of genuine understanding of lean; and (3) lack of resources.

Lack of leadership and initiative. Many traditional American industries (automotive for example) enjoyed long periods of success that allowed company executives to act as managers rather than leaders or change agents. When demands change and competition intensifies, these executives tend to look for solutions within the existing system rather than offering a compelling new vision for their organization, such as creating a lean enterprise.

For most suppliers, lean is a radically different way of operating, not something that arises from a few internal adjustments. If leadership doesn't recognize this, lean results will be negligible. Companies often find that the change is so significant that it's necessary to bring in outside experts to successfully shift to lean.

Another leadership obstacle is the absence of a compelling reason to change. Unfortunately, many companies will not make lean a priority unless they are facing a crisis.⁴ It's up to the leadership to identify the crisis and amplify the stakes of lean implementation for all employees. Otherwise, the workforce will lack the motivation to embrace lean.

Lean changes the way every problem is solved and redefines the goals and actions of each employee.

Lack of genuine understanding of lean. Lean is not an excuse for widespread layoffs or operating “on the cheap.” Done right, lean is a growth strategy. It allows companies to reduce waste and reallocate resources to provide more value throughout the supply chain.

If a supplier views lean simply as an isolated set of tools within the existing company culture, lean success will be limited at best. Truly lean companies understand that it is an entire business system that requires a complete cultural shift. Lean changes the way every problem is solved and redefines the goals and actions of each employee.

Lack of resources. Some suppliers avoid implementing lean because they believe they don’t have the time to train or the money to invest in a lean program. In reality, virtually all companies find that the benefits of going lean outweigh the expenditure. They benefit from reduced working capital, reduced manufacturing space, higher efficiencies and improved employee morale.

What will I gain by choosing lean suppliers?

When you select a supplier that has fully integrated lean, you enter a mutually beneficial relationship in which both parties stand to profit. What exactly will you gain from this lean partnership?

Value Added Manufacturing. The ultimate goal of lean is not cutting, reducing or taking away. It’s about determining where value lies and then redirecting resources to add value. Waste reduction is simply a means to achieving this goal. A lean supplier finds ways to increase the value you receive, whether that’s providing ready-to-use parts, design engineering assistance, or reduced lead times.

Demand Flow Manufacturing. Does your supply chain push inventory out on a preset schedule, or do you pull in inventory based on current demand? True lean suppliers utilize Demand Flow Manufacturing to keep their product constantly moving (flowing), giving you only what you need when you need it. They use a multi-skilled workforce, flexible manufacturing capabilities, and short cycle times to achieve flow. You benefit by reducing your inventory and the related waste of time, space and resources, as well as gaining a greater ability to make change orders and reduce defects.

Value Stream Mapping. A lean supplier will have a team of employees that work shoulder-to-shoulder with you to identify value and waste, and then take steps to eliminate the latter. This process begins by drawing a “current state” value stream map that shows each step and all information flows in your supplier/customer relationship, making all the waste in the process visible and obvious. Then a “future state” map is drawn, showing the process without waste. This map is used to guide Kaizen events and joint lean projects between the companies.

Continuous Improvement. Lean suppliers understand that lean is not a one-time fix. There are always more ways to reduce waste and enhance value, and even a process that has been “leaned out” once will become more efficient in subsequent passes. A lean supplier embodies Kaizen through continual improvements that make you a more successful manufacturer.

Motivated and Responsive Workforce. Beyond the bottom line benefits of lean is its tremendous ability to inspire and motivate a workforce. Lean’s bottom-up approach empowers each employee to take ownership of their work. By choosing a supplier who gets lean right, you’ll partner with people who listen better, respond faster and deliver on promises to maximize value.

Problem Solving. Hand-in-hand with continuous improvement and empowered employees is a knack for problem solving. When a lean culture takes hold, employees start to instinctively see problems they might have missed before and look for better ways to accomplish tasks. Their job satisfaction hinges on solving problems that deliver you more value.

Design for Manufacturability. Engineers at traditional suppliers see component design as matter of basic functionality. “Does it work?” is the primary question they ask. Engineers at lean suppliers look at a broad range of value-driven factors in component design. This could include materials, manufacturing costs, part process-ability for both the supplier and customer, quality and aesthetics.

Error Proofing. Suppliers usually have some inspection processes in hopes of minimizing the number of defects that reach your door. But lean suppliers eliminate the possibility of errors by standardizing best practices, cross training employees and building inspection into the production process. With lean in place, the chances of making a mistake are dramatically reduced.

On-Time Delivery. The risk of a demand flow supply chain is that if one supplier fails to deliver, your entire manufacturing process could be stalled. Experienced lean suppliers have demand flow down to a science, with the ability to make on-time deliveries to your facility as product is demanded.

Knowledge Sharing. Lean suppliers will often present concepts that you can adapt to other parts of your supply chain or even apply to your own business. In fact, a capable supplier could become a valued lean consultant and will usually be honored to help. It’s likely that you have lean knowledge that will benefit them as well. The result: both sides are more efficient, provide increased value and become more profitable.

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What does a real lean supplier look like?

Behind every successful lean manufacturer is a thriving lean supply chain. Pella Corporation for example has experienced stellar sales and market share growth since beginning its lean enterprise transformation in 1993. Lean's benefits are also evident in employee satisfaction. Pella has been named a *Fortune 100 Best Companies to Work For* in eight consecutive years.

Pella credits its success to an enterprise-wide implementation of lean — including its supply chain. The company uses a Lean Assessment system to rate suppliers in categories such as leadership, support structure for lean and customer focus. Today, 90% of Pella suppliers meet or exceed the company's lean requirements.

"The rating system is the foundation of our supplier development program," said Kraig Koehler, Manager of Supply Management for Pella. "The leadership at our suppliers understands there's an expectation of continuous improvement."

One of Pella's partner suppliers, custom plastic extrusion manufacturer Intek Plastics, has leadership that fully supports and understands lean programs. But it's the people on the floor that are ultimately responsible for this supplier's lean success. Intek has successfully made the crucial shift to a self-sustaining lean culture where continuous improvement is embraced by each employee.

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"Change and improvement are driven by teams on the manufacturing floor, not by management," said Kevin Lillo, VP of Manufacturing at Intek Plastics. "It's common for employees to initiate Kaizen events on their own, and that's exactly what we want."

Intek engineers visit Pella's shop floor to gain a better understanding of the value and waste in their processes. The engineers return to Intek with ideas to adjust their approach accordingly. By "syncing up" customer and supplier, product flow improves and both companies become more efficient.

"The connection between our engineers and Intek's has been very beneficial," noted Mike Buchheit, Manager of Lean Supplier Development for Pella. "We invite their people to get inside our manufacturing sites to understand our needs, and our guys are welcome at their facilities as well. It's about partnership."

In the end, Intek's continuous improvement culture distinguishes it from would-be lean suppliers. "'Doing lean' is a cliché too many companies have fallen for," stated Lillo. "Lean is not a program, nor are there 'ten steps to lean success.' Lean is a complete, irreversible and continuous way of doing business."

According to Buchheit, the benefits of this supplier's ongoing lean journey are evident to Pella. "Intek's quality, flexibility, lead times and costs have all improved as a result of their lean initiatives."

“Intek’s quality, flexibility, lead times and costs have all improved as a result of their lean initiatives.”

How can I tell if a supplier is really lean?

The difference between genuine and ineffective lean suppliers may not be evident from phone conversations or company websites. Facility tours are the best way to determine the quality of a supplier’s lean initiatives. Here are the key lean indicators that you should look for when visiting a supplier.

Lean that Moves Beyond Manufacturing.

A real lean supplier does not limit efforts to just manufacturing. You should see evidence of lean in accounting, new product development, sales, materials management, logistics, and even human resources. This lean enterprise approach will also include the supplier’s customers (e.g., you) as well as their own suppliers, creating an extended value stream.

Senior Management Leadership. The only way to create a true lean transformation is with strong leadership at the top of an organization — including the CEO. This includes not only intellectual support, but also physical engagement in the program. The senior management team should have a deep commitment to lean principals and even participate in Kaizen events. Support for lean should be an important factor in the hiring and promoting company managers.

Management System for Sustaining Lean. Sustained continuous improvement doesn’t happen on its own. The supplier’s management system must support and drive the long-term lean transformation. Ask about policy deployment (sometimes called strategy deployment or Hoshin Kanri), managing for daily improvement (MDI), lean audits, Kaizen reviews and value stream maps. While lean suppliers will not all have the same management system, they should all have a comprehensive approach.

Ask for evidence of lean results — not just activity. If the supplier can’t provide it, they aren’t really lean.

Tangible Proof of Lean Results. A supplier that’s doing lean right will have evidence such as better quality, on-time delivery and safety. Supposed lean suppliers will want to focus on the number of Kaizen events and the lean tools they’ve implemented. While those pieces are necessary, they’re not sufficient. Ask for evidence of lean results — not just activity. If the supplier can’t provide it, they aren’t really lean.

Evidence of a Visual Factory. Within minutes of setting foot on a lean supplier’s production floor, you should see cues that it’s a visual factory. These include signs of 5S, metrics boards, Kanban signals, standardized work and maintenance visuals. If these critical elements are not in active use, the supplier is not embracing lean.

Employee Engagement. A supplier must fully engage its people in continuous improvement efforts to realize the full potential of lean. This means that lean is not just in the hands of engineers, but is the responsibility of everyone in the organization. Kaizen events and standard work should be held by the people actually doing the work. This kind of engagement empowers and energizes employees, and when you visit, you should see that energy in people. A brief conversation about lean with a production floor employee will speak volumes about the supplier you're assessing.

See next page for the 15-Point Lean Supplier Checklist.

Footnotes

1. Womack, James P. and Jones, Daniel T. *Lean Thinking: Banish Waste and Create Wealth in Your Corporation*. (New York: Simon & Schuster, 1996), 266.
2. Society of Manufacturing Engineers. *Lean Directions*. March 12, 2007. www.sme.org/cgi-bin/get-newsletter.pl?LEAN&20070312&3
3. Productivity Press. *Lean Insider*. August 17, 2006. www.leaninsider.productivitypress.com/LeanInsider/tabid/36/EntryID/3/Default.aspx
4. Lean Enterprise Institute. *Common Lean Questions*. www.lean.org/WhatsLean/CommonLeanQuestions.cfm

About Intek Plastics

Intek Plastics engineers, extrudes and fabricates custom plastic extrusions for companies requiring unique, high-performance solutions. Intek's scale and sophistication allow it to serve any industry with world-class manufacturing, including construction, refrigeration, agriculture, recreation, appliance, telecommunications, point of purchase and transportation.

Founded in 1961, Intek Plastics is a privately held company with two facilities 30 minutes south of the Minneapolis-St. Paul International Airport. More than 350 Intek associates work together to create value for customers through their commitment to Lean and continuous improvement.

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15-Point Lean Supplier Checklist

This is a resource for evaluating the lean initiatives of suppliers in both discrete and process industries. The checklist has broad application and can be tailored to fit your needs.

Leadership

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- | | | |
|---|--------------------------|--------------------------|
| 1. Senior management is fully involved and committed to lean. | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. There is a formal and documented lean strategy. | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Operational objectives for quality, cost, safety and time are communicated and visible to all employees. | <input type="checkbox"/> | <input type="checkbox"/> |

Continuous Improvement

- | | | |
|--|--------------------------|--------------------------|
| 4. Continuous improvement initiatives are positive and employee-directed. | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Continuous improvement teams and Kaizen events are well-planned and structured. | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Preventative and predictive maintenance are used to minimize downtime. | <input type="checkbox"/> | <input type="checkbox"/> |

Motivated and Responsive Workforce

- | | | |
|---|--------------------------|--------------------------|
| 7. Employees are trained cross-functionally and their skills are documented. | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Employees perform to standard work and machine operators have up-to-date, readily accessible standard work sheets. | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Employees produce to standardized work with visual aids. | <input type="checkbox"/> | <input type="checkbox"/> |

Demand Flow Manufacturing

- | | | |
|--|--------------------------|--------------------------|
| 10. Customer demand drives batch size. | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Takt Time is used to drive the pace of production and make improvements. | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Finished goods inventory is optimized to support customer demand. | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Inventory reduction is a measurable objective for the plant. | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. A pull system is in place for raw materials and replenishment orders. | <input type="checkbox"/> | <input type="checkbox"/> |

Value Added Manufacturing

- | | | |
|--|--------------------------|--------------------------|
| 15. Parts arrive ready to use, needing no additional processing or inspection. | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|