



WHY LEAN IMPLEMENTATIONS FAIL

“Have You Created a Continuous Change Culture?”

by Alan Padgett | December 17, 2004 |

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Overview

Lean implementations fail to achieve all the successes promised because something more is needed. It has been over 20 years since the Lean revolution took root in the U.S. Many companies have implemented some of the principles of Lean like "Just in Time Inventory" or "Pull" systems. But according to Jeffery K. Liker, in his 2004 book *The Toyota Way: 14 Management Principles from the World's Greatest Manufacturer*, almost no American business has realized the potential of following the Lean principles of the Toyota Way. Many have attempted to replicate Toyota's success but none have matched the dramatic improvements achieved by Toyota. Why is it that with so much good writing and so many Lean implementations that so few American companies have fully realized the benefits of the Lean revolution?

Maybe you are like some business leaders who believe that Lean is a passing business fad that has now run its course. In Liker's book, he sets out to show that not only is the Lean revolution far from over but instead it is only beginning. Liker contends that there is a tremendous untapped potential for dramatic improvement to be reaped across the American manufacturing sector. Indeed, he states that there are few examples of organizations that have been successful in replicating the successes of the Toyota Way.

"The U.S. has been exposed to TPS (Toyota Production System) for at least two decades. The basic concepts and tool are not new... The problem I believe, is that U.S. companies have embraced Lean tools but do not understand what makes them work together in a system. Typically management adopts a few of these technical tools and even struggles to go beyond the amateurish application of them to create a technical system. But they do not understand the power behind true TPS, (Toyota Production System): The continuous improvement culture needed to sustain the principles of the Toyota Way... Their performance will continue to lag behind those that adopt a true culture of continuous improvement." (Liker 2004)

A True Culture of Continuous Improvement

"A true culture of continuous improvement" is what is required. Liker has identified the primary problem most organizations face in implementing large scale change, weather it is Lean, Six Sigma or some other company wide initiative. What is called for is a new culture, a culture of continuous improvement, a culture that embraces change.

The primary reason most companies fail in their Lean implementation is because they fail to successfully change the culture. The concepts are so revolutionary that are meet with great resistance when they are introduced in an organization. Despite an executive's best implementation efforts there will always be an entrenched resistance to the changes that are being promoted.

Similar to the situation the U.S. military faces in Iraq today, there are insurgents within your organization. They have an allegiance to old theories and philosophies. They may appear to be supportive of change but when your back is turned, they will revert to supporting the old philosophies and principles they know best. Inevitable there will be conflict between long entrenched ways of doing business and the revolutionary new ideas. What is called for is not merely an implementation of Lean principles, but a business transformation that manages change, overcomes the resistance to the new ideas and instills a culture of continuous improvement.

The story of Toyota is of a market leader in quality, productivity and profitability that thru dogmatic dedication to a set of principles has changed the way the automobile industry does business. They have developed the new paradigm that is the next evolutionary step beyond Henry Ford's mass production. While the Lean manufacturing principles are rampant in the automobile industry, many other industries are just now starting to implement these practices. Indeed for firms in those industries lagging behind in the Lean revolution, there is a great opportunity to gain a dramatic competitive advantage over the competition. Industry leaders willing to embrace change and adopt Lean methodologies and a culture of continuous improvement can become tomorrow's market leaders.

For those unfamiliar with the principles of Lean production let me provide a brief primer. Let us start with a quote from Taiichi Ohno, the founder of the Toyota Production System. It was Ohno who along with his colleagues in a country ravaged by World War II took on the challenge to build a car company that would match the profitability of the world's largest manufacturer of the day Ford. Out of that challenge they developed what would become known as Lean manufacturing.

"All we are doing is looking at the time line from the moment the customer gives an order to the point when we collect cash. And we are reducing that time line by removing the non-value-added wastes." (Ohno 1988)

In the early 80s, the Japanese automobile industry invaded the American market like a great storm blowing in off the Pacific. Lean manufacturing began to draw a lot of attention. Late in the decade; several books from Toyota's managers were published in the U.S. This was followed by publication of the landmark book *The Machine that Changes the World* by James Womack and Daniel Jones in 1991. The Lean revolution began to take hold in the American automobile industry. To further explore the concepts of Lean and extend them from the shop floor to the entire corporation Jones and Womack published a follow up in 1996 *Lean Thinking: Banish Waste and Create Wealth on your Corporation*. In this authoritative text the authors define Lean thinking as a five step process:

1. Defining customer value

The starting point for Lean thinking is understanding what the customer values in your good or service. This begins with a concise attempt to precisely define value in terms of a

specific product with specific capabilities offered at specific prices through a dialogue with specific customers. Defining customer value involves thinking of the firm on a product line basis rather than the traditional vision characterized by functional departments.

2. Defining the value stream

The value stream is the set of actions required to bring a specific product through what Jones and Womack define as the three critical management tasks of any business. The *problem solving task* runs from concept through design to production launch. The *information management task* runs from order taking through scheduling to delivery. The *physical transformation task* proceeds from raw materials to a finished product in the hands of the customer. Specifying the value stream for each product inevitably exposes non-value added steps and waste through out the value stream.

3. Making it "Flow"

It is common for most companies to be organized by functional departments and for each department to perform work in large batches before transporting the work to the next department for further processing. It turns out that this batch work approach always means long waits and excess inventory. Eliminating this departmentalized batch mentality is the goal of creating flow. The ideal situation is "one piece flow." A situation where work is completed and one single unit and the unit are transferred to the next workstation before beginning work on the next unit. In a one piece flow environment any delay in a work center is immediately felt in the downstream work center. This is another element of Lean production, making problems immediately visible so they can be addressed.

4. "Pulling" from the customer back

The effect of converting from the old "department and batch mentality" to a "product team and flow system" is that the time required to deliver on customer orders falls dramatically. This will give you the ability to produce exactly what the customer wants when the customer wants it. You can throw away the sales forecast and have the customer tell you exactly what they want and then produce to their order. The customer pulls the needed product from you. You need to design systems that translate that pull back through each of the steps in the value chain. This eliminates the practice of producing to a best guess forecast and pushing the inevitable excesses in inventory on to the customer at discounted prices.

5. Striving for excellence

As an organization begins to implement the above steps, it suddenly dawns on them that there is no end to the reduction in waste and the improvement in a product that is achievable. Your offering is growing closer and closer to the customer's true desires.

Perfection or at least striving for perfection does not sound so crazy anymore. This is the seeds of a continual improvement culture, realizing that every day there is something that can be done to improve the processes to come closer to the ultimate goal of excellence.

Basic Principles of Lean Manufacturing

In 2004, Jeffery K Liker, in his book *The Toyota Way* expands upon the basic principles of Lean Manufacturing. He seeks to empower companies to achieve results closer to those achieved by Toyota. Liker extends on Jones and Womack's five step process to postulate fourteen principles of the Toyota Way. He attributes Toyota's success to the pursuit of the following fourteen principles:

Principle 1. *Base your management decision on a long term philosophy, even at the expense of short term financial goals.*

Companies should be unified around a vision that is larger than just making money. A good starting point is to strive to generate value for the customer, for the economy and for society as a whole. It is this philosophical vision that should inform all decision that the company makes. The company culture should stress responsibility, self reliance and trust in ones' own abilities. A continuous improvement of ones skills that allow you to add value is also stressed.

Principle 2. *Create continuous flow to bring problems to the surface.*

Similar to Jones and Womack's step number three creating flow is essential. Work processes should be redesigned to be high value added continuous flow. Flow allows problems to surface immediately and is the basis for a culture of continuous improvement.

Principle 3. *Use "pull" systems to avoid overproduction.*

Provide your customers what they want, in the amount they need, when they want it. Replenishment of material is triggered by consumption and inventories are maintained at the lowest levels. This necessitates systems that are attentive and responsive to customer demands. Flexible work centers that can transition from one product type to another quickly are essential.

Principle 4. *Level out the workload*

Work like the tortoise not like the hare. Eliminate over burden to people and machinery by working to even out the production schedule. This principle is seemingly contradictory to principle 3. To level the work load building of some finished goods inventory may be

required. Lean attempts to limit inventory accumulation to a limited number of items for which you have committed future orders.

Principle 5. *Build a culture of stopping to fix problems, to get quality right the first time.*

Use all available quality assurance methodologies. Quality drives your value proposition for the customer. One technique that is used throughout the manufacturing floor is the use of an andon board. The board displays the daily production figures hour by hour and any emerging problems that might effect production. In most work centers workers have an andon cord above their work station. By pulling the cord they notify supervisors immediately of a problem. If the problem is not resolved within a limited time the entire production line is stopped and everyone becomes aware of the problem. Supervisors are evaluated on how well they react and record andon cord pulls. This environment requires you put support systems in place that can quickly solve problems and put counter measures in place. This builds a culture that strives to get it right the first time rather than doing expensive rework.

Principle 6. *Standardized task are the foundation for continuous improvement and employee empowerment.*

Establishing stable repeatable processes that maintain predictability and timing is essential for establishing systems that flow. Standards are thought of as the best we know about the job today, but this is to be improved on tomorrow. Standardize today's best practices when an innovation is developed create a new standards and implement it company wide.

Principle 7. *Use visual control so no problems are hidden.*

Install simple visual indicators that tell people when the standards are being followed. Avoid using computer screens that take workers out of the work area. Reduce all reports to a single sheet of paper even for your more difficult financial decisions.

Principle 8. *Use only reliable thoroughly tested technology that serves your people and processes.*

It is best to workout a process and to add the necessary disciplines before adding technology. New technologies can be unreliable and general are not well understood and are difficult to standardize. A standardized process that is well implemented is better than a misunderstood new technology.

Principle 9. *Grow leaders who thoroughly understand the work, live the philosophy and teach it to others.*

Better to grow leader internally than to hire outside. Leaders must be role models of your company's philosophies. The leader must thoroughly understand the work processes so they can be teachers and reinforce your company's culture as a learning organization.

Principle 10. *Develop exceptional people and teams who follow your company's philosophy.*

Empowerment happens when employees use the company tools to solve problems. Build cross functional teams to improve quality and productivity. Work hard to reinforce the company culture and assure it is followed over the course of years.

Principle 11. *Respect your extended network of partners and suppliers by challenging them and helping them improve.*

Value your partners and suppliers and view them as extensions of your business. Challenge them to grow and help them implement lean practices. Helping them to improve will demonstrate you value them and develop a relationship of trust.

Principle 12. *Go and see for yourself and thoroughly understand the situation.*

Solve problems by going to the source and seeing the problem personally. Always speak based on facts you have personally observed. A dramatic example of this is the Ohno circle. Tachii Ohno the father of the Toyota Production System is known for his practice of painting a circle of the plant floor and having managers stand in that circle for hours at a time and to report back their observations. Those who failed to report a thorough understanding of the processes being observed were sent back for additional time in the Ohno circle. For more on understand problems at the source I recommend the Book Gemba Kaizen.

Principle 13. *Make decisions slowly by consensus, thoroughly considering all options; implement decisions rapidly.*

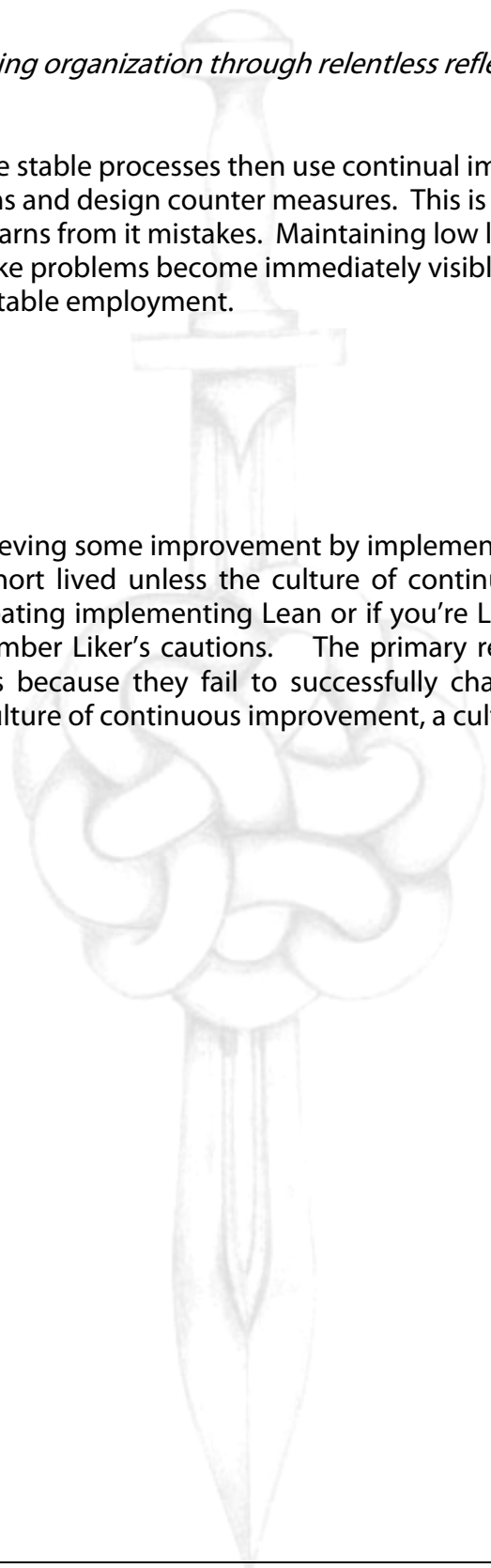
Thoroughly explore alternatives before choosing one path to follow. Take time to build consensus by understanding all views on an issue. It is only when all alternatives have been considered that a decision is made, then implementation should be pursued swiftly.

Principle 14. *Become a learning organization through relentless reflection and continuous improvement.*

Design and standardize stable processes then use continual improvement tools to identify root causes of problems and design counter measures. This is the essence of developing an organization that learns from its mistakes. Maintaining low levels of inventory and using one piece flow will make problems become immediately visible. Develop succession planning to promote stable employment.

Summary

You may be successful in achieving some improvement by implementing a few of these principles, however the effect will be short lived unless the culture of continuous improvement has been adopted. So if you are anticipating implementing Lean or if your Lean implementation is failing to achieve its potential remember Liker's cautions. The primary reason most companies fail in their Lean implementation is because they fail to successfully change the culture; they fail to implement a new culture, a culture of continuous improvement, a culture that embraces change.



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