

Common Questions Organizations Ask About Lean Manufacturing

By

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We are not like the automotive industry --- will Lean Manufacturing still work for us?

Most people have heard about the tremendous success that Toyota Motor Corporation (<http://www.toyota.com/>) has earned through advancing Lean Manufacturing as an integral part of its cultural foundation. Through years of effort and refinement the Toyota Production System (TPS) has emerged as the platinum standard for defining Lean Manufacturing. Although the majority of press about Lean Manufacturing focuses on the auto industry, mainly because of Toyota, companies in any industry can benefit. In fact, the insurance and healthcare industries have been embracing and adapting its “tools” to address their unique challenges, and achieving substantial results.

Lean is so adaptive because it is a philosophy. It focuses on working smarter, eliminating sources of waste, identifying and improving substandard processes, and developing a culture that is driven to improve every single day. The real question is: Why is your company waiting to begin Lean transformation?

What are the main premises of Lean?

Lean begins and ends with the customer. It focuses on providing what the customer needs, when they need it, meeting the expected quality, while providing the product/service at the lowest cost possible. The four (4) key goals of a Lean organization are:

1. **Improve Quality.** Quality, basically, means to provide a product/service that continually meets the customer’s requirements. Today, quality is expected, but still a primary way to differentiate your organization from your competition.
2. **Eliminate Wasteful Practices.** Waste is any activity that takes up time, resources, or space without providing value as a product or service is transformed for its market form or function. Value-addition activities are those that increase the market form or function of a product or service---what your customer would be willing to pay for. Non-value added activities do not add form or function to a product or service, and should be eliminated or reduced. Some waste is visible, such as material scrap. Other waste may not be visible such as repeatedly transporting tooling back and forth. Lean tools seek to identify, classify, measure, and selectively reduce/eliminate the various value and non-value added tasks/activities, enabling people to focus their efforts on reducing wasteful practices. The following is a simple formula to calculate your company’s value-added/non-value added ratio for a given process:

(Time Required for Value Added Steps in Process ÷ Total Time Required for Process) X 100% = % of Value Added Time in Process

3. **Reduce Product/Service Lead Time.** Lead time is the total time required to complete a specific task or process. Reducing lead time, therefore, results in improved cash flow for your enterprise and increased flexibility to respond to your customer’s needs. Keep in mind---*95%+ of most company’s lead times consist of non-value added activities.*
4. **Reduce Total Cost.** Cost could be defined as an outlay or expenditure of money, time, labor, or some other resource necessary to provide a product or service. Since for-profit organizations attempt to do just that, earn profits, an increase in cost means a decrease in profit. Increases in costs used to be offset by increased prices. But today most customers are not willing to accept price increases. Consequently companies that adopt this tactic may lose market share to competitors. Applying Lean tools for reducing sources of waste, reducing product costs, and increasing profitability and flexibility will help reverse this trend. And will translate into improved value for your customers and increased ROI for your investors.

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What does waste mean in terms of Lean?

There are eight (8) basic types of waste, and brief examples of each, in Toyota Production System. They are:

1. **Correction.** Doing a process wrong or over. An obvious example is scrap, but reworking products is also.
2. **Overproduction.** Producing more than the customer requires at the moment. Producing extra of an item without a corresponding customer order. This is the worst of the 7 wastes since it contains elements of other waste forms by its nature (extra inventory, extra waiting, more scrap, etc.).
3. **Inventory.** Maintaining more inventory than required to support the customer's needs, including supplies.
4. **Motion.** Unnecessary worker movements.
5. **Transportation.** Transporting something further than needed.
6. **Waiting.** Unscheduled delays due to waiting for people, materials, or information.
7. **Process.** Overcomplicating work instructions to the point where time is wasted trying to interpret them.
8. **Unused People Skills.** Lack of engagement and empowerment among workers, conflicts between leaders and workers

Here is a simple form that can be used by your team as a waste identification exercise. Select a team, identify an example of each type of waste, the possible causes of each, what proposed corrective actions could be taken, and how would the waste be measured.

Type of Waste	Identify One Example of Each Type of Waste	Possible Cause	Proposed Corrective Action	Method of Measurement (e.g., by time, quantity, distance)
Transportation				
Correction				
Over Production				
Motion				
Waiting				
Inventory				
Processing				
Unused People Skills				

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What are the key elements of Lean?

1. Empowering people – push decision-making as close to the process at-hand as possible---these are the folks who understand the processes because they utilize them! This also builds trust between management and the work force.
2. Eliminate waste – work smarter, not harder. We’ve all heard this before---why not stop talking and take action?
3. Make it as simple as possible – simple things are understood, remembered, repeated, and become habit.
4. Do one thing at a time – focus on solving a problem, once and for all, before moving on. Gain success and momentum.
5. Think “flow” – products, information, and communication need to flow with minimum “friction”.
6. Make it visual – visual indicators permit someone to know when a process is not functioning quickly by observation.
7. Build in quality – quality at the source means products and processes that perform as expected, first time and every time. We should demand and expect consistency from one another as much as our external suppliers!

How is Lean implemented? What is the typical process?

The basic steps include:

1. Basic education of a company’s leadership, their understanding, and acceptance of the undertaking
2. Forming and education of Kaizen Team of key employees in the use of Lean tools
3. Project assessment, analysis, and selection
4. Establish goals and objectives
5. Conduct Kaizen event including Value Stream Mapping (VSM) inside your company’s four walls and 5S
6. Expand education of associates through original Kaizen Team
7. Understand how culture change is affecting the organization and communicate benefits continually
8. Continue Kaizen Events, communication, and leadership’s visual support of the program

For more details The Society of Automotive Engineers has published standards SAE J4000 (Identification and Measurement of Best Practice in Implementation of Lean Operation) http://www.sae.org/technical/standards/J4000_199908 and SAE J4001 (Implementation of Lean Operation User Manual) http://www.sae.org/technical/standards/J4001_199911.

How long will the Lean implementation take?

Sustaining the momentum is the real challenge to any Lean undertaking. This is where company leaders must show their unwavering commitment. Improvements can begin quickly, however a Lean transformation may take 6 months or more. It may be a year or more before people truly adopt and accept the cultural changes that are required. As your associates continue to see immediate payback for their involvement in Kaizen events a cultural foundation begins to take shape.

And as the process steps above are repeated positive results will reinforce the reason Lean was embraced by the organization’s leaders.

For more information about Supply Chain Optimization or Lean Manufacturing consulting, education, training, or implementation please contact:

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