

What is Lean?

Indian Hills Community College

To better understand what Lean is, it's important to first understand what Lean is not.

Lean is not...

- a way to reduce total headcount,
- a quick fix,
- easy.

Though Lean came primarily through the Toyota Motor Company, a manufacturer of automobiles and trucks, all types of companies and organizations, from healthcare to government, are finding value from the model they have put forth. Below is a brief history and overview of lean production.

The term "Lean" was coined in the 1980s by researcher John Krafcik, as he and others at MIT were discovering that Japanese techniques of automobile production were giving companies like Toyota a significant advantage in the marketplace. Lean production is "lean" because it uses less of everything compared with mass production:

- Half of the human effort in the factory
- Half the manufacturing space
- Half the new investment in tools
- Half the engineering hours to develop a new product in half the time

Also, it requires keeping far less than half the needed inventory on site, results in many fewer defects, and produces a greater and ever growing variety of products.

(Source: *The Machine That Changed the World – The Story of Lean Production*, James P. Womack, Daniel T. Jones, and Daniel Roos)

Five principles of Lean were identified in the book, *Lean Thinking* by Jim Womack and Dan Jones ©1996:

1. Precisely specify value by product (as defined by the customer)
2. Identify the value stream for each product
3. Make value flow without interruptions
4. Let the customer pull value from the producer
5. Pursue perfection

Based on these principles, we discover the need to understand the difference between "value" and "waste." Taiichi Ohno, Toyota's former Chief Engineer, defined "7 Mudash" (7 Wastes) which are activities that do not add value from the customer's perspective.

The 7 Wastes:

- Transportation
- Inventory
- Motion
- Waiting

- Over-processing
- Over-production
- Defects

Other “wastes” later identified by lean thinkers and researchers include:

- Underutilized People
- Confusion

Many lean “tools” have been developed over time to address these many wastes.

Some tools commonly associated with Lean:

- Value Stream Mapping
- 5S Workplace Organization
- Visual Management
- Poka-yoke (mistake proofing)
- Set-up Reduction – SMED
- Kanban Systems (to support Pull)
- Cellular Manufacturing
- Standardized Work
- Heijunka Box – Production Leveling
- Kaizen

Often, companies have focused on the implementation of these tools to improve their own processes and have had some success. However, as we learn more about Toyota through great authors and researchers like Jeffery Liker, David Mann, Jim Womack, John Shook, Mike Hoseus, Mike Rother, and others, there is much more to the Toyota Production System than tools. They have introduced us to:

- The 14 Principles of the Toyota Way
- Toyota Culture
- Hoshin Kanri – Policy Deployment
- PDCA Cycles
- A3 Problem Solving System – Developing People
- 8-Step Problem Solving
- Toyota Kata – Improvement Kata and Coaching Kata
- Gemba Walks

They repeatedly tell us that if we just implement tools, we will never achieve the level of success enjoyed by Toyota and others who have followed their lead into the deeper concepts and practices.

Beyond the “tools” of Lean, some organizations are digging deeper to discover an organizational system based on key management principles – The Toyota Way.

Certainly, some benefits can be realized by implementing the tools of lean, but to begin seeing sustained significant improvement, an organization must develop a business system to support those improvements and develop new tools applicable for their own environment focused on the 4P model identified by Jeffery Liker and expanded upon by subsequent authors.

It is our goal at Indian Hills to stay on top of the latest methods and concepts being learned from Toyota and other leading companies. From that deeper understanding and knowledge combined with our own experience, we work to develop opportunities to share these ideas, philosophies, successes and failures in practical ways with our region through training opportunities and other outlets.