

Lean Now!

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Is Lean the approach for your organization in these difficult economic times? Lean can best be described as “the systematic elimination of waste”. The seven wastes as defined by the Toyota Production System are: over production, poor processing, excess inventory, unnecessary motions, waiting, unnecessary movements and defects. The trained Lean practitioner will relentlessly go after these wastes and put plans in place to eliminate them.

Many of the Lean concepts originated from Henry Ford in the early 1900’s when he changed the manufacturing methodology from the craftsmen style of production to mass production.^[1] He introduced the practice of continuous flow and the production line where materials were fed to the workers and assembled to cars on a moving conveying platform. Cars which were only purchased by the wealthy now became available and affordable to many Americans.

After World War II most of the industrial world was in ruins. US businesses competed on how to make more and the focus was not on quality and reliability. Japan did not have the resources, materials, equipment and finances to compete at this level, so, with the help of Dr W Edwards Deming, they concentrated on quality and the elimination of waste in their processes. With the emphasis on Total Quality Control, Zero Inventories and Just-In-Time they introduced practices such as, 5S, value stream mapping, kaizen, continuous flow, kanban, heijunka and quick changeover. These problem solving techniques are used today with successful Lean organizations.

The term “Lean” was introduced in 1987 by James Womack and John Krafcik who were colleagues at MIT.^[2] The Toyota Production System and Japanese Manufacturing Techniques were very successful at reducing costs and improving quality and process cycle times in manufacturing and saw a need to extend this success beyond the factory floor. They called the process “Lean” meaning needs less of everything to create a given amount of value.” They determined that these same methods could be applied to design flow, order entry flow and production flow and included the transactional and service industries. James Womack and Daniel Jones’ book “Lean Thinking”^[3] concluded that Lean can be summarized into 5 principles. They were to specify customer value, identify the value stream, make the value flow, customer pull, and perfection. Today Lean is used as a continuous improvement methodology in many other non-manufacturing businesses such as, healthcare, IT, and finance.

Lean and Six Sigma are now becoming the predominant improvement programs today. A 2007 Opinion Survey by the Lean Enterprise Institute ^[4] asked 2500 business people what are the biggest trends in your industry now. The top 5 responses were; value stream mapping (a lean tool) within facility (44.4%), 6 sigma and lean (36.4%), implementing in non-production environments (32.1%), pull (30.1%), and continuous flow cells (25.9%). Lean initiatives including tools such as kaizen (continuous improvement) have shown to dramatically improve process operations. The book “Gemba Kaizen” by Masaaki Imai ^[5] lists the following improvements among U. S. companies using Lean and kaizen: setup time (-66.4%), lead time (-55.7%), cycle time (-17.9%), downtime (-52.1%), operators required (-32.0%), work-in-process (-59.3%), finished goods inventory (-43.5%), distance traveled/part (-54.1%), floor space (-29.4%), parts required/unit (-57.0%), cost quality rejects (-95%), rework (-71.7%), scrap (-45.9%), and equipment required (34.0%). These trends still hold true today.

Not all companies have been successful with implementing Lean. The biggest roadblock as with many failed programs is the inability to change the corporate culture. A successful Lean transformation requires the organization to find a change agent, use trained Lean masters, identify the crisis or lever, map the value streams, and begin continuous improvement. The survey cited above also asked these same 2500 business people what are the biggest obstacles to Lean implementation at their facility. The top three obstacles to Lean implementation were middle management resistance (36.1%), lack of implementation know-how (31%), and employee resistance (27.7%).

What lies ahead for Lean? With the downturn in the economy, Lean is going to play a major role for organizations in order to compete and survive. Supply chain management will be a core competency across the Lean enterprise and involves supplier relationship management and customer relationship management. Finally, Lean masters or senseis^[6] will be critical to manage resources, waste and reuse in the GREEN environment.

References

- [1] Womack, James, Daniel Jones, and Daniel Roos. *“The Machine That Changed the World”*, New York: Simon & Shuster, 1990
- [2] Womack, James. *“Deconstruction the Town of Babel”*, LEI, October 2004
- [3] Womack, James and Daniel Jones. *“Lean Thinking”*, New York: Simon & Shuster, 2003
- [4] Lean Enterprise Institute. *“New Survey: Middle Managers Are Biggest Obstacle to Lean Enterprise”*, October 2007
- [5] Imai, Masaaki. *“Gemba Kaizen”*, New York, New York: McGraw Hill, 1997
- [6] *Sensei* is a Japanese word for a master and teacher of their profession. They refer to a master of Lean as a sensei.