

Lean Management

Management Tool for Operational Excellence

In most of the business processes right from core manufacturing to service we observe that the time and efforts taken can be reduced. This is a gut feel which is transformed into real action through the systematic, meticulous process of Lean manufacturing system leading to operational excellence.

During 1970 Toyota Motor car company of Japan created a history by manufacture of a car in Japan, shipping it to North America, and sell it faster and cheaper than domestically made vehicles with huge import restrictions and all this with improved quality. The time taken for introducing new & innovative vehicles by Toyota was about 50% than the American stalwarts. To study this a Research project was taken up to analyze the world-wide automotive industry in 14 countries. A book titled "The Machine that changed the world" by Dr. Womack raised the curtain of Japanese success and given birth to the concept of "Lean Manufacturing Systems".

Lean talks about Business philosophy, Processes, People and partners, and Problem solving techniques. Lean philosophy centers around the customer. It advocates to base the management decisions on a long term philosophy, even at the cost of short term financial goals. Carry through the organization toward a common purpose that is bigger than just making money. Generate value for customer, society and the economy. Look to a goal of producing "Added Value" in whole business chain.

Look at the assembly line or the activities in any service operations, you will find at least 60% activities do not contribute directly to the end result. Let us observe the activities in a Truck chassis assembly line 1) Delivering components to the assembly line, 2) Walking 20 feet to pick up the component, 3) Picking up bolts for the components, 4) Walking 20 feet back to the chassis on the assembly, 5) **Position the component on the chassis**, 6) walking to the power tool, 7) Reaching to the power tool, 8) Pulling the power tool to the component, 9) *Placing the bolts in the component* 10) **Tightening the bolts to the chassis with the power tool**, 11) Walking back 5 feet for the next component. Activity at 5, and 10 only are the Value added activities. All other activities do *not add value* on the assembly line. Normally we concentrate on reducing time on these value added activities and ignore to eliminate the activities altogether which do not

add value to the operation. Lean manufacturing meticulously analysis the activities and eliminate waste from the whole chain.

Examples of Non-Value adding wastes are 1. Over production – Production just to keep machine/manpower busy builds unnecessary inventory and is a waste, 2. Process delays - Lot processing delays, equipment downtime, time taken for tool to arrive 3. Unnecessary transport or conveyance 4. Incorrect processing due to inefficient tool, higher quality standards than needed, 5. Excess inventory leading to obsolescence, storage cost and delays in sorting/searching 6. Wasted motions, 7. defective production, and 8. Unused employee creativity – potential not blown up.

Lean manufacturing talks about three major sources of waste *Muda*(Non value added activities), *Mura*(Unevenness in process flow and *Muri* (Overburdening the machine and manpower).

Lean manufacturing works on following principles –

- 1.Listen to the voice of customer – Just produce what customer wants – nothing more nothing less. Carry out *value stream mapping* for each operation
2. Right process will produce right results – Use pull systems, Single piece flow, level out the work load, build culture to stop and fix the problems, get quality right the first time and standardize the operations.
3. No hide and seek – There should be continuous flow of process to highlight the problems, go for visual management to surface the problems and solve them.
4. Continuously solve the root problems – Go and see for yourself the problem (*genchi genbutsu*), analyze and make decisions slowly by consensus but implement decisions faster.
5. Create a learning organization by applying the principles of 5 “S” (Sort, Straighten, Shine, Standardize, Sustain), Continuous improvement (*kaizens*), replenishment system for inventory control (*kanban*), Ask 5 times Why to every process to improve/eliminate the activity, Mistake proofing (*Poka Yoke*) etc.

Lean manufacturing is a philosophy and equally applies to service operations where there are chain of activities which can be analyzed, eliminated and improved upon by organizing into an Integrated supply chain to enhance the customer value.

It takes a smart person at least 20 years to complete the full training, attitudinal changes, knowledge and real fruits of Lean manufacturing. However, most significant savings, say over 85% can be achieved in first 9 months time. These can be –

- 93% reduction in Lead-time
- 83% reduction in WIP inventory
- 91% reduction in FG inventory
- 50% reduction in Overtime
- 83% improvement in productivity

Lean manufacturing is applied in most advanced manufacturing plants across the world. It is not just a Cost cutting tool but a gateway to successful value creating and people oriented organization. It equally applies to service operations where there are chain of activities which can be analyzed, eliminated and improved upon by organizing into an integrated supply chain to enhance the customer value. The classic examples of Lean in Service organizations are the Canadian Postal service, Academics, banks, insurance companies etc. At home ICICI bank and Wipro are the best examples of organizations implementing Lean principles.

How to implement Lean Manufacturing System is a much bigger challenge. Well begun is not half done here, because it is a long drawn philosophical process which one must go through. Following steps can be taken to move towards lean organization:

- 1) Change management thinking from business profit center to Long term value creating organization for the society at large.
- 2) If it is a green field project, concentrate on lowest recruitment to be of a person with high level of integrity and loyalty. No need to get all smart guys.
- 3) For existing organization, lot of seminars to be conducted to bring loyalty towards organization, sense of belongingness can be brought faster by involving families of employees in various activities of the company. For example, a blood

donation camp organized on Annual day by wives of employees.

- 4) Get involved with families of employees at relatively senior level and not alone the HR person or departmental head. It must be across organization.
- 5) Organise training programs involving families.
- 6) Start a day with morning exercise and meeting.
- 7) Motivate people to be more creative, Kaizen scheme.
- 8) Change habit of employees through 5 "S"
- 9) Involve employees in Quality Circles ppm projects, TQM. Involve employees in every smallest capital investment in space, machinery etc.
- 10) Provide sports and recreation including library to all.
- 11) Provide opportunity to all employees including lowest level to express themselves. Say everyone conducts a training programme on some subject.
- 12) Share achievements and pitfalls with all on a regular basis, involve all in discussion.
