

What Can All Businesses Learn from Lean Manufacturing Principles?

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Lean manufacturing is a systematic approach to eliminating wastes in the production process. Wastes can be anything that does not add value to a finished product, including processes, materials, and people (i.e., not using employees to their full potential). Lean manufacturing is a continuous improvement process with the end objective of delivering products in the quickest, most efficient, and cost effective manner.

Lean principles are based on a production system developed in the 1940s. The system demonstrated that even though processes differ between factories, common wastes and inefficiencies could be found in all types of production environments. It was groundbreaking, and over the years, its principles have been applied to a number of other non-manufacturing industries such as information services and health care delivery.

Lean manufacturing focuses on identifying seven forms of wastes:

1. **Waiting:** Waste occurs whenever materials are not moving through a process.
2. **Overproduction:** Waste occurs in "Just in Case" operations in which goods are produced in anticipation of possible demand, which can result in excessive lead times, high storage costs and more defects.
3. **Over Processing:** Waste occurs when using equipment in processes where cheaper, less complex tools can be more efficient. This activity is commonly referred to as "using a sledgehammer to crack a nut."
4. **Work in Progress:** Excessive inventory is a result of overproduction and waiting, and results in longer lead times and higher storage costs.
5. **Transportation:** It is wasteful to transport a product between processes. Production should be a smooth flow between one process and another.
6. **Motion:** Unnecessary ergonomic activities such as walking, bending, searching and reaching can add up to delays and longer lead times.
7. **Defects:** Defects resulting in re-work and scrap that negatively impacts the bottom line.

These wastes are often symptoms to deeper problems. Companies that fail at lean manufacturing often treat the symptoms rather than taking further steps to identify and resolve root causes, which are often "invisible" on the surface.

In a true lean environment,

- Production is "just in time" – created as needed
- Materials flow through a smooth process in which unnecessary waiting and transporting are eliminated
- Equipment is right-sized to specific production tasks and processes
- Inventory levels are reduced
- Quality and accuracy are improved, and defects minimized
- Lean manufacturing leads to higher profits, cost-efficient production, improved quality, greater through put, improved employee morale and increased time to market.

While the terms in this article may be somewhat specific to the manufacturing industry, many of the principles can be utilized by companies outside of that industry. Service companies who do not fully utilize their employees, for example, may be able to find ways to better utilize their staffs by fixing the roots of the problems instead of treating the symptoms. Also, nearly every business has to contend with defects or mistakes in their work, and while fixing each defect on a case-by-case basis is definitely good customer service; fixing the root cause of the defects is good business.



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