



Lean Manufacturing

Overview

- What is Lean Manufacturing?
- Principles of Lean transformation
- Summary



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1. Deliver Value From your Customer's Perspective

Definition:
A well system regulates the flow of materials in a manufacturing process. It is a way to manage the work flow, reducing waste, increasing the efficiency of the manufacturing process, and reducing the cost of production.

Customer value:
Customer value is the value that the customer perceives in the product or service. It is the difference between the benefits that the customer receives from the product or service and the costs that the customer incurs to obtain it.

Value Stream Map:
A value stream map is a tool that is used to identify and eliminate waste in the manufacturing process. It is a visual representation of the flow of materials and information from the customer to the supplier.

What is Lean Manufacturing?

Definition:
Lean Manufacturing is a systematic approach to reducing waste and increasing efficiency in the manufacturing process. It is based on the principles of the Toyota Production System (TPS).

Principles:
- Reduce waste
- Increase efficiency
- Improve quality
- Reduce cost
- Increase customer value

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Principles to Lean Transformation

1. Deliver Value From your Customer's Perspective
2. Eliminate Waste
3. Continuous Process Improvement

3. Continuous Process Improvement.

Definition:
Continuous Process Improvement (CPI) is a systematic approach to identifying and eliminating waste in the manufacturing process. It is based on the principles of the Toyota Production System (TPS).

Principles:
- Identify waste
- Eliminate waste
- Improve quality
- Reduce cost
- Increase customer value

2. Eliminate Waste

- a) One Piece Flow
- b) Takt Time
- c) Zero defects

a) One Piece Flow

Definition:
One Piece Flow (OPF) is a manufacturing process where only one piece of material is in process at any given time. This reduces the amount of work in progress (WIP) and improves the flow of materials through the manufacturing process.

Principles:
- Reduce WIP
- Improve flow
- Increase efficiency
- Reduce cost
- Increase customer value

b) Takt Time

Definition:
Takt Time is the time available for producing a unit of product. It is calculated by dividing the available production time by the customer demand.

Principles:
- Match production to demand
- Reduce waste
- Improve quality
- Reduce cost
- Increase customer value

c) Zero defects

Definition:
Zero Defects (ZD) is a quality management philosophy that aims to eliminate all defects in the manufacturing process. It is based on the principles of the Toyota Production System (TPS).

Principles:
- Prevent defects
- Improve quality
- Reduce cost
- Increase customer value



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What is Lean Manufacturing?

Definition of Lean

It is a production system characterized by order, better, and reaction to customer demand, and overall reduced time.

Lean manufacturing is the management philosophy derived mostly from the Toyota Production System (TPS). There is great interest in this philosophy and it is called as 'Lean' only in the times.

What is Lean Manufacturing?

Advantages

- Lower Quality production
- Reduce customer satisfaction
- Increase production of resources
- Reduction of waste
- Reduced lead times
- Reduced inventory and constant poor customer service

1. Deliver Value From your Customer's Perspective

Pull Systems

A pull system regulates the flow of resources in a manufacturing process, so a small, one-business business inventory can eliminate more fluctuations of raw materials, work in process, and finished goods.

Customer orders drive production schedules based on actual demand and customer knowledge than forecasting.

A pull system has the following advantages:

- Minimization of waste and associated space
- Flexibility to deliver customer demands quickly
- Reduction in the need of working capital in a business.

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3. Continuous Process Improvement.

The term "continuous improvement" means incremental improvement of products, processes, or services over time, with the goal of reducing waste to long-term weight, cost, functionality, customer service, or product performance.

To get the best of the best, an organization must constantly review in the effectiveness of its processes and eliminate more difficult objectives to society customers.

c) Zero defects

In a philosophy of Lean, it is a holy grail that every process should be designed so that it is necessary to produce zero defects.

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What is Lean Manufacturing?

Definition:

Lean Manufacturing is the production control technique for eliminating the waste from your manufacturing while delivering quality products on time at least cost with greater efficiency.

The core idea is to maximize customer value while minimizing waste. Simply, lean means creating more value for customers with fewer resources.

What is Lean Manufacturing?

Creation of Lean:

It is a production system characterized by smaller batches, quick responses to customer demand, and smooth product flow.

Lean manufacturing is a management philosophy derived mostly from the Toyota Production System (TPS) (hence the term Toyotism is also prevalent) and identified as "Lean" only in the 1990s.

What is Lean Manufacturing?

Advantages:

- Higher Quality production
- Reach customer satisfaction.
- Maximum utilization of resources
- Minimization of waste.
- Shorten lead times.
- Identify problems and communication between operation

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1. Deliver Value From your Customer's Perspective

Pull Systems

A pull system regulates the flow of resources in a manufacturing process. As a result, your business becomes increasingly lean, eliminating excess inventories of raw materials, work in process, and finished goods.

Customer orders drive production schedules based on actual demand and consumption rather than forecasting.

A pull system has the following advantages:

- Minimization of waste and obsolete stock.
- Flexibility to deliver customer demands quicker.
- Reduction in the need of working capital in a business.

