

Manufacturing Waste Elimination

The fundamental idea of lean manufacturing is actually quite simple; it is the unremitting challenge on eliminating waste from manufacturing processes. However, before it can be eliminated it has to be identified so, what is waste?

Waste can take many forms, but the basic idea is to eliminate anything and everything that does not add value from the perspective of a customer. Another way to look at lean manufacturing is as a collection of tips, tools and techniques in the form of best practices that have been proven to be effective for driving waste out of the manufacturing process.

Traditional lean identifies seven key areas of waste typically referred to as the 'Seven Deadly Wastes'. An extremely important form of waste that is not represented within the Seven Deadly Wastes is that of unused human potential.

One of the reasons that this form of waste is often under emphasised or even ignored at companies is that responsibility for it lies squarely on the shoulders of management. Unused human potential often results from management policies and management styles that diminish employee contributions. By way of distinction, developing strong coaching skills for managers can be very effective in strengthening employees. This form of waste results in a multitude of lost opportunities (for example, lost motivation, lost creativity and lost ideas).

The Seven Wastes described below:

Waste (Muda) - is NOT work. Waste are activities, motions, behaviours' or actions that are not part of the actual work i.e. non-essential activities. Waste refers to such things as: waiting, repairing, sorting, inspecting, verifying, checking, counting and rearranging materials unnecessarily, or handling parts that are not needed right away.

The Forms of Waste

Taiichi Ohno, Chief Engineer and creator of the Toyota Production System, categorised seven types of *waste* (muda). They are:

1. Waste of overproduction.
2. Waste of time on hand (waiting).
3. Waste in transportation.
4. Waste of processing itself.
5. Waste of stock on hand (inventory).
6. Waste of movement.
7. Waste of making defective products.

Overproduction

Overproduction is producing more – and earlier – than needed. It is producing 'just-in-case' instead of 'just-in-time'. Ohno considered this the worst type of waste, which

contributes to and helps hide other forms of waste. Typically, we associate this category of waste with production in large batches, which creates costly inventory, increases waiting time, requires unnecessary transportation, and hides quality problems.

Waiting

Waiting prevents flow. A product is waiting when we do not work on it. A typical case is waiting in queues for the next step in the operation.

Transportation

The movement of products, materials or people between processes is a waste if it is not directly associated with value-adding activities. Besides transportation costs, excessive movement can cause damaged or lost products or materials, delays and stress, and may require additional space and equipment.

Over-processing (waste of processing itself)

Over-processing is adding more features to a product than the customer will use or requires. These features do not add value but cost more and take longer. It also refers to using high-capacity equipment that can create bottlenecks and extend lead-time.

Inventory

Inventory of raw material, work-in-progress and finished goods generates warehousing, depreciation, shrinkage, insurance and lost opportunity costs. Inventory impedes the rapid identification of quality problems and extends the lead-time.

Motion (waste of movement)

This waste occurs when employees or equipment unnecessarily move within a workspace. A typical example is looking for and reaching for a tool. Waste of movement is a productivity, quality, health and safety issue.

Defects

We associate this waste with the cost of poor quality, which has many components, from rework to lost business.

Elimination of these wastes are an integral part of this workshop, this will be re-enforced post training room training with a waste walk through the facility during which delegates will identify SOME of the waste in a process. *(The process is to be specified by the client prior to commencement of the workshop).*

Who should attend?

- Operations Managers
- Shop Floor Personnel/Supervisors
- First Line Managers
- Team Leaders

Course duration:

Workshop (Classroom element) - 4 to 5 Hours.

Practical - 1 Hour.

Maximum number of delegates: Eight (8) per session.