

Consider the following counter-intuitive truths about non-value-added waste within the philosophy of TPS:

- *Often the best thing you can do is to idle a machine and stop producing parts.* You do this to avoid over production, the fundamental waste in TPS.
- *Often it is best to build up an inventory of finished goods in order to level out the production schedule, rather than produce according to the actual fluctuating demand of customer orders.* Leveling out the schedule (heijunka) is a foundation for flow and pull systems and for minimizing inventory in the supply chain. (Leveling production means smoothing out the volume and mix of items produced so there is little variation in production from day to day).
- *Often it is best to selectively add and substitute overhead for direct labor.* When waste is stripped away from your value-adding workers, you need to provide high-quality support for them as you would support a surgeon performing a critical operation.
- *It may not be a top priority to keep your workers busy making parts as fast as possible.* You should produce parts at a rate of customer demand. Working faster just for the sake of getting the most out of your workers is another form of over production and actually leads to employing more labor overall.
- *It is best to selectively use information technology and often better to use manual processes even when automation is available and would seem to justify its cost in reducing your headcount.* People are the most flexible resource you have. If you have not efficiently worked out the manual process, it will not be clear where you need automation to support the process.

Toyota has identified seven major types of non-value-adding waste in business or manufacturing processes. One additional added by Jeffery K. Liker

1. *Overproduction.* Producing items for which there are no orders, which generates such wastes as overstaffing and storage and transportation costs because of excess inventory.
2. *Waiting (time on hand).* Works merely serving to watch an automated machine or having to stand around waiting for the next processing step, tool, supply, part, etc., or just plain having no work because of stockouts, lot processing delays, equipment downtime, and capacity bottlenecks.
3. *Unnecessary transport or conveyance.* Carrying work in process (WIP) long distances, creating inefficient transport, or moving materials, parts, or finished goods into or out of storage or between processes.

4. *Over-processing or incorrect processing.* Taking unneeded steps to process the parts. Inefficiently processing due to poor tool and product design, causing unnecessary motion and producing defects. Waste is generated when providing higher-quality products than is necessary.
5. *Excess Inventory.* Excess raw material, WIP, or finished goods causing longer lead-times, obsolescence, damaged goods, transportation and storage costs, and delay. Also, extra inventory hides problems such as production imbalances, late deliveries from suppliers, defects, equipment downtime, and long setup times.
6. *Unnecessary movement.* Any wasted motion employees have to perform during the course of their work, such as looking for, reaching for, or stacking parts, tools, etc. Also, walking is waste.
7. *Defects.* Production of defective parts or correction. Repair or rework, scrap, replacement production, and inspection mean wasteful handling, time, and effort.
8. *Unused employee creativity.* Losing time, ideas, skills, improvements, and learning opportunities by not engaging or listening to your employees.