



# APO

Asian Productivity Organization

## P-Glossary



### 7 Wastes

A waste is an activity that does not add any value to the product or service. This is one of the ways in which organizations waste or lose money, as the customer certainly does not need it and will not pay for it! Mr. Taiichi Ohno, Toyota's engineer, came up with 7 categories of wastes which cover all the ways in which manufacturing organizations waste money. These 7 wastes (called *muda* in Japanese) are: waiting, transporting, processing, Inventory, Motions, Defects/rework & Overproduction, as explained below:

**Waiting** Waiting is one form of waste that is all too familiar. We encounter it everywhere. For example: waiting for a machine that has broken down; delay in arrival of materials; or someone being late for a meeting. The cause may often be bad planning, bad organization, lack of proper training, lack of control, or laziness and lack of discipline.

**Transporting** Transporting or moving things from one place to another is a common form of waste, since it does not add to the value of products. Hence, it should be eliminated or reduced as much as possible. There are two aspects to be considered: eliminating the need for transport by better layout; and improving the method of transport.

**Processing** Processing waste is inherent in the process or design itself. For example, an electronic typewriter has fewer parts and processes than a mechanical typewriter. Replacing a metal dustbin with a plastic one can reduce several steps in the production process. Using preprinted forms can save a lot of paperwork. Unnecessary processing and procedures is also a waste.

**Inventory** When excessive inventory is carried, it ties up valuable financial resources and may deteriorate over time. It also takes up space in the factory. Likewise, the work in process (WIP), and finished stocks are also a waste.

**Motions** Movement of equipment or people add no value to the product. All physical work can be broken down into basic motions. Motion study is one aspect of industrial engineering that assists us to reduce wasted motions. Usually this is done by improving the workplace layout, practicing good housekeeping and workplace organization, and introducing jigs and fixtures and low cost automation.

**Defects/rework** Waste caused by producing poor-quality products and defective parts or poor service is another common form of waste. Time is often spent in reworking poor products or addressing customer complaints. Last-minute urgent requirements may disrupt systems and cause delays in delivery to customers. Sometimes poor quality can cause accidents.

**Overproduction** Often manufacturing produces more than actually is needed or was ordered. The unused products may have to be discarded when not required at a later

stage. This is very costly. Overproduction is caused by poor planning, poor forecasting, producing too early, and lack of quality control. Other kinds of wastes categorized of late include:

- ▶ Untapped human potential
- ▶ Inappropriate systems
- ▶ Energy and water

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*See also: Toyota Production System; Lean Production System*

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