

### Introduction

The seven wastes of Lean Manufacturing are what we are aiming to remove from our processes by removing the causes of Mura and Muri as well as tackling Muda directly. But what exactly are the seven wastes of Lean Manufacturing (or 7 Mudas)?

Source: <http://leanmanufacturingtools.org/77/the-seven-wastes-7-mudas/>

### Wastes

Profit is your selling price less your costs, no matter how you think about the selling price it is very much dictated by the market not by yourself. If you charge too much then your customers will go elsewhere, even if you charge too little you may lose customers as they will perceive there may be something wrong with what you are offering. Therefore the only way you have to improve your profits are to reduce your costs; this means removing all elements of waste from your processes.

### 1. The Waste of Transportation

Transport is the movement of materials from one location to another, this is a waste as it adds zero value to the product. Why would your customer (or you for that matter) want to pay for an operation that adds no value?

### 2. The Waste of Inventory

Inventory costs you money, every piece of product tied up in raw material, work in progress or finished goods has a cost and until it is actually sold that cost is yours. In addition to the pure cost of your inventory it adds many other costs; inventory feeds many other wastes.

Inventory has to be stored, it needs space, it needs packaging and it has to be transported around. It has the chance of being damaged during transport and becoming obsolete. The waste of Inventory hides many of the other wastes in your systems

### 3. The Waste of Motion

Unnecessary motions are those movements of man or machine which are not as small or as easy to achieve as possible, by this I mean bending down to retrieve heavy objects at floor level when they could be fed at waist level to reduce stress and time to retrieve. Excessive travel between work stations, excessive machine movements from start point to work start point are all examples of the waste of Motion.

### 4. The Waste of Waiting

We tend to spend an enormous amount of time waiting for things in our working lives (and personal lives too), this is an obvious waste. The Waste of Waiting disrupts flow, one of the main principles of Lean Manufacturing, as such it is one of the more serious of the seven wastes or 7 mudas of lean manufacturing.

### Mnemonic to Remember 7 Wastes

#	TIMWOOD	WORMPIT
1	Transportation	Waiting
2	Inventory	Over Production
3	Motion	Rejects
4	Waiting	Motion
5	Over Processing	Processing
6	Over Production	Inventory
7	Defects	Transport

### 5. The Waste of Overproduction

The most serious of all of the seven wastes; the waste of overproduction is making too much or too early. This is usually because of working with oversize batches, long lead times, poor supplier relations and a host of other reasons. Overproduction leads to high levels of inventory which mask many of the problems within your organization.

The aim should be to make only what is required when it is required by the customer, the philosophy of Just in Time (JIT), however many companies work on the principle of Just in Case!

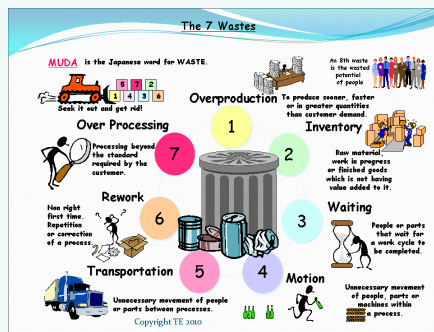
### 6. The Waste of Over-processing

The waste of Overprocessing is where we use inappropriate techniques, oversize equipment, working to tolerances that are too tight, perform processes that are not required by the customer and so forth. All of these things cost us time and money.

### 7. The Waste of Defects

The most obvious of the seven wastes, although not always the easiest to detect before they reach your customers. Quality errors that cause defects invariably cost you far more than you expect. Every defective item requires rework or replacement, it wastes resources and materials, it creates paperwork, it can lead to lost customers.

## The Seven Wastes



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By [deleted]  
[cheatography.com/deleted-2754/](https://cheatography.com/deleted-2754/)

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