

# Capacity Waterfalls and O.E.E.

Methods of measuring Process Effectiveness.



Consider the following ....

- **How efficient are your processes?**
- **How can you measure this?**
- **Do you use Capacity waterfalls?**
- **Do you measure O.E.E.?**



# Waterfall charts - an explanation....

A waterfall chart is a graphical representation of the efficiency of a process. It considers a starting point (planned running hours in this example) and then methodically subtracts every aspect that has prevented the process from achieving its potential output capacity.

1. Starting point - Planned running hours.

2. Next, subtract any output capacity lost due to absenteeism.

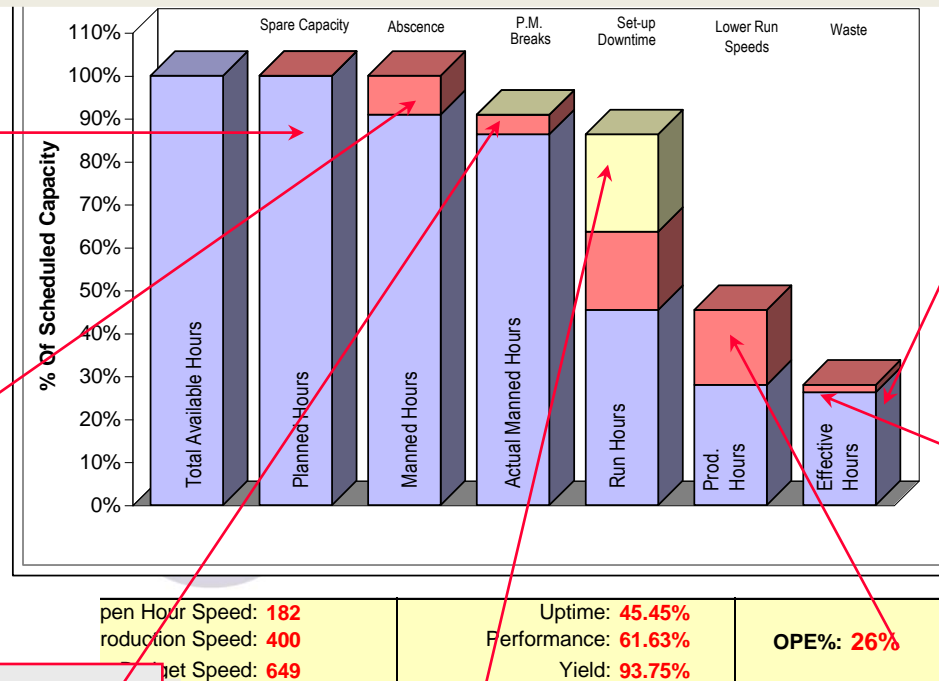
3. Then subtract Production time lost due to P.M. (Planned Maintenance) and meal breaks.

4. Then take-off stoppages for set-up and down-time.

5. Take into consideration Capacity lost, due to slow running speeds.

7. The result, is an illustration of the actual effective production time for the process.

6. Finally subtract production lost due to waste being produced.



# O.E.E. = Overall Equipment Effectiveness

OEE is a standard measure of machine performance which combines 3 basic elements:

## 1. Uptime



The amount of time the machine is running when crewed.

## 2. Performance



The speed at which the machine is running calculated against target speed.

## 3. Yield

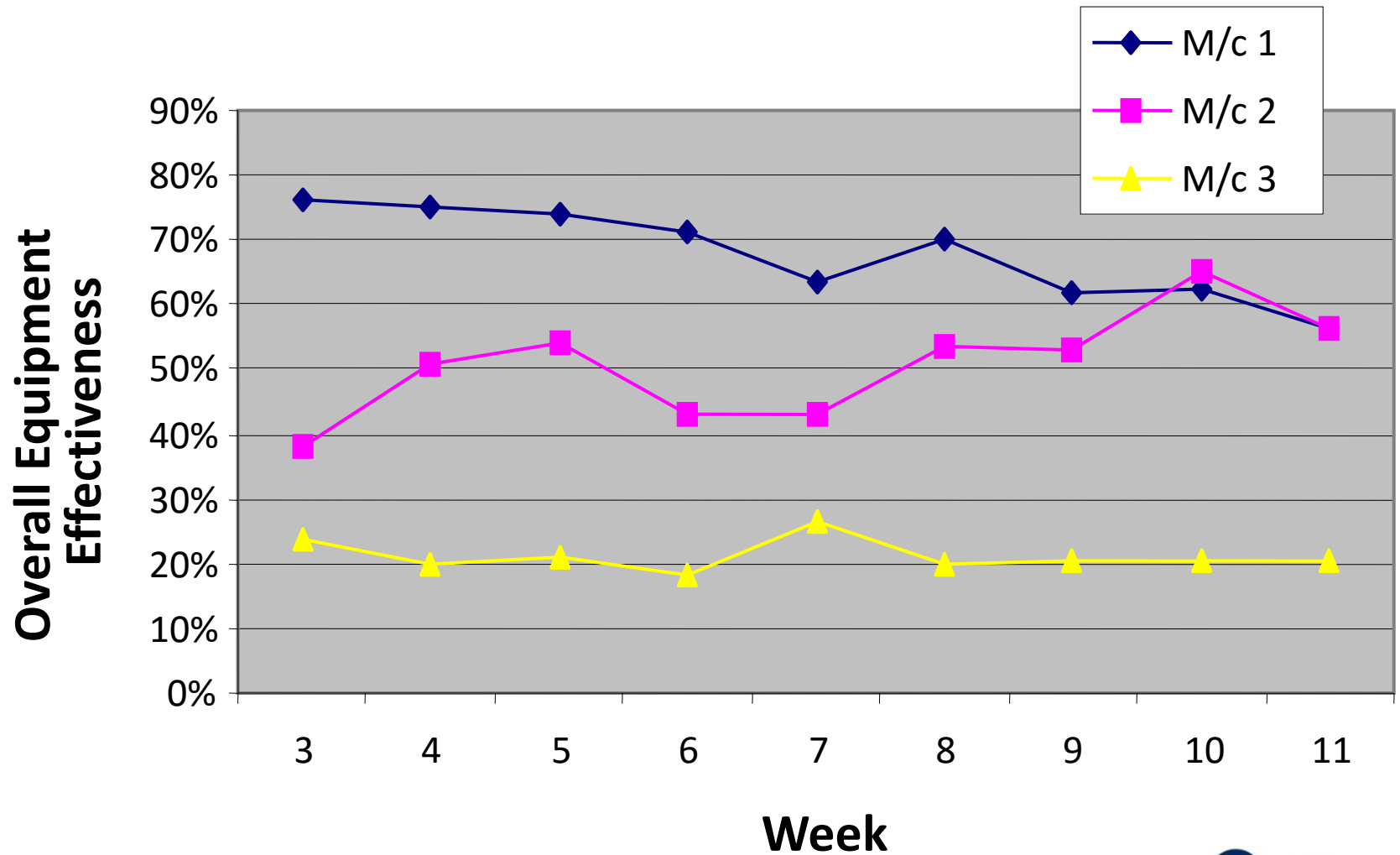


The amount of good product produced versus defective product.

These 3 elements are multiplied together to produce a percentage measure of performance.

A machine with an OEE of 100%, runs continuously, at target speed, producing no waste.

## OEE Results



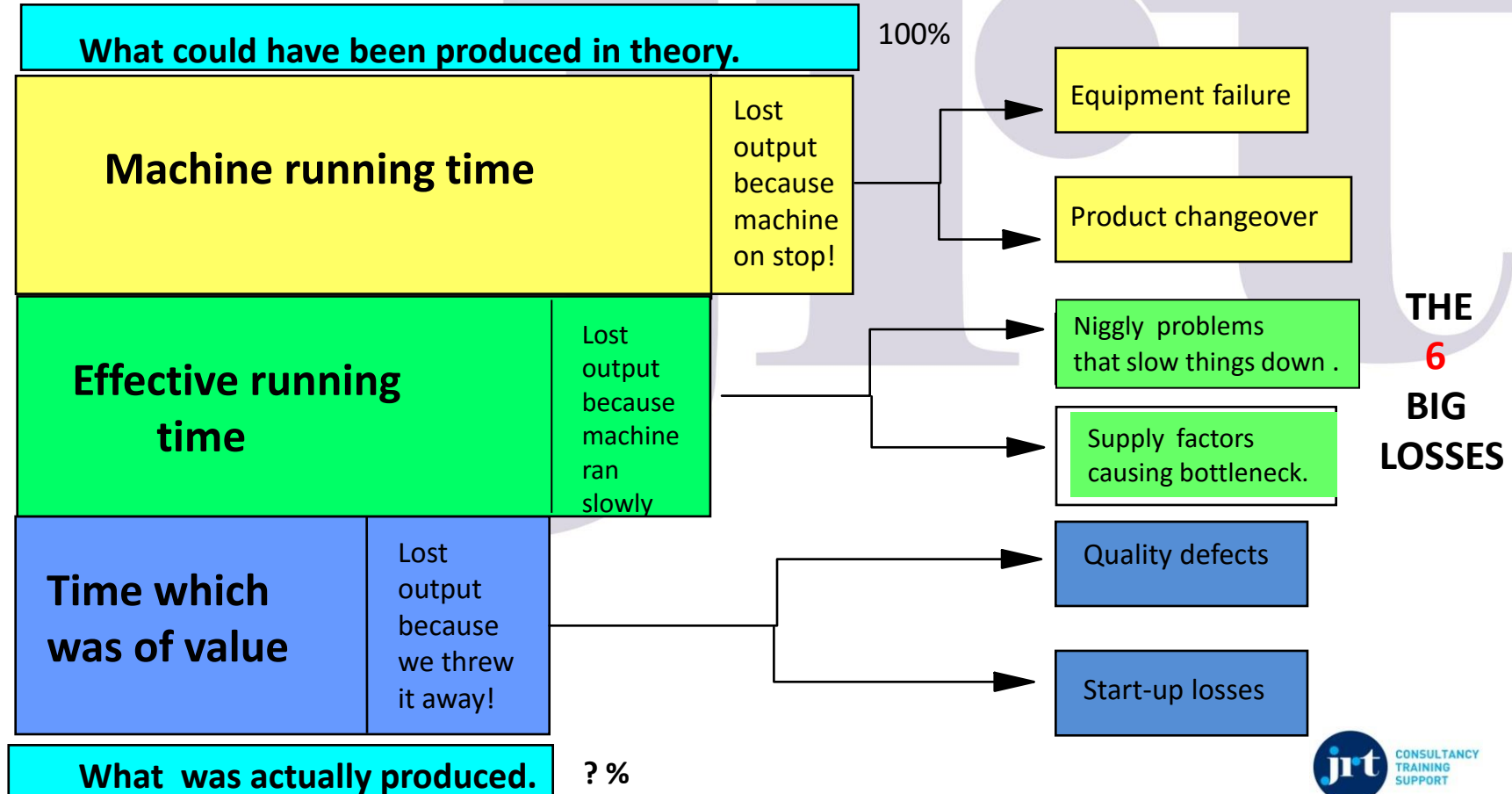
## Advantages of using O.E.E. analysis :

- It is simple to understand and communicate.
- By monitoring the 3 key index trends it is easy to spot where performances are unsatisfactory.
- It forces monitoring (and controlling ?) of the 6 big losses.

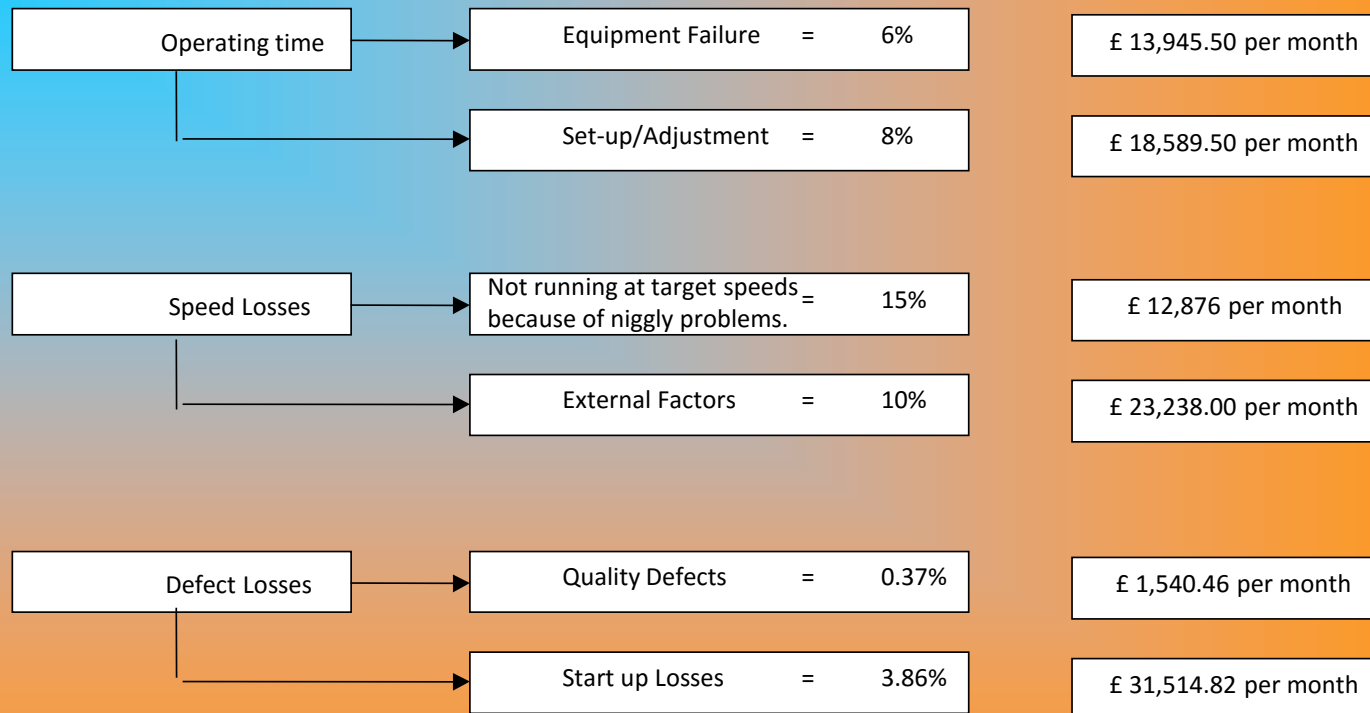
- What are they ?

# The 6 BIG EFFICIENCY LOSSES

Why didn't we produce as much as we could have?



***It is particularly useful if you can represent these in £ notes !***





## ***The 7 Steps to World Class.***

1. Develop a Capacity cascade for each process.
2. Develop the OEE figures for each process.
3. Identify the 6 Big losses for each process.
4. Identify the priority loss/losses.
5. Identify the causes of the priority loss/losses.
6. Set up a Team to address these causes.
7. Regularly review progress and publicise the gains.