

PROCESS IMPROVEMENT

This is a pack of process improvement handouts that I have written, adapting both original source material and my own experience. Process improvement helps organisations to save money, reduce waste, improve throughput and get more from their resources.

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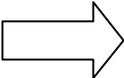
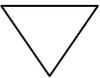
PROCESS IMPROVEMENT

REMOVING EXCESS

1. PROCESS CHARTS

In order to make improvements to any process it is necessary to 'see the process' so that waste can be identified. All parts of the process which do not add value to the finished product or service are waste. Removing waste increases quality and profitability.

The following symbols can be used as a guide when constructing a Process Flow Chart. Identify all stages by asking "what happens next". When the chart is complete, add up the cumulative totals for time taken and distance travelled. Ask "which parts add value" and then **remove**, **simplify** or **combine** all those parts which are anything less than the bare minimum required.

PROCESS SYMBOL	STAGE	TIME SPENT	DISTANCE TRAVELLED	ACTION TO REMOVE OR REDUCE
	OPERATION – e.g. drill hole Adds Value			
	MOVE – e.g. to the stores Waste			
	DELAY – e.g. wait for part Waste			
	STORE – e.g. on the shelf Waste			
	INSPECT – e.g. check for defects Waste			
	DECISION – e.g. accept or reject? Can Reduce Waste			

2. SERVICE INDUSTRY PROCESSES

In the service sector, charts can be made more effective by dividing the page into two halves. On the left hand side show those parts of the process which involve direct interaction with external customers and on the right hand side show the actions which are entirely internal. For example if modelling the process to check out of a hotel, put the front desk activity on the left and the accounts activity on the right.

When considering how external customers interact with an organisation it can be beneficial to produce a 'Cycle of Service' (Albrecht & Zemke in Service America!). This is drawn as a circle with all the events written at the points of the compass. Each event is a potential 'Moment of Truth' which a customer may experience.

3. MOMENTS OF TRUTH

A 'Moment of Truth' is a concept rather than a technique and its strength is that it takes account of customer experiences. Each MoT is a point of potential dissatisfaction for a customer, where they may be lost, or where they may be delighted and become a loyal customer. Customers build an *impression* of an organisation through the *cumulative* effect of many Moments of Truth.

In many service organisations, such as banks, delivery services, hotels, travel or consultancy there may be no tangible product which remains after the operation has been completed. The customer is left with a memory of their experiences, which become a *generalised feeling* about the organisation.

Studies suggest that it costs 5 times as much to regain a lost customer as it does to acquire a new one, so management needs to be proactive in analysing Moments of Truth. To analyse Moments of Truth in an organisation work through the following process:

1. Produce a 'Cycle of Service' to identify all the 'touch points' a customer has with the organisation.
2. Record all the minute steps a customer takes in order to deal with the organisation.
3. Start with the point where the customer first makes contact, through to the last time the product or service is experienced.
4. Produce a different flow chart for each type of service or interaction.
5. The steps need to follow the customer's experience and ignore internal boundaries or departments.
6. Use Pareto Analysis (see below) to identify the '*vital few*' Moments of Truth which make the most difference to the customer.
7. Use process improvement techniques (see below) to remove unnecessary complexity, simplify the process, combine repetitive elements, or to add in missing items.

4. IMPROVEMENT TOOLS

Remove waste from the process by using the following tools:

- 1) **5-Whats.** Ask "*What is going on here?*" or "*What's the reason for doing this?*" and then repeat 5 times to dig down to the root cause of why things are needed.
- 2) **5S.** A housekeeping methodology: Sort / Simplify / Sweep-Scrub / Standardise / Self-discipline. Can be simplified to SOS: Simplify – Organise – Standardise.
- 3) **'And if' or 'Yes and...'** Keep asking these to test how further improvements could be made.
- 4) **Pareto Analysis.** 80% of the value is contained within 20% of the operations. Also 80% of the problems are due to 20% of the types of error which occur. Sometimes called 'The 80/20 Rule'. Aim to identify the '*vital few*' and get rid of the '*worthless many*'.
- 5) **Pokayoke.** Failsafing to stop errors becoming defects and being passed to the customer. Investigate each one of the following possible causes for error: Man (people) / Material / Machine / Method / Information. A failsafing device is usually an inexpensive device which undertakes 100% automatic inspection. These include *contact devices* such as parking height bars, or seat armrests, *fixed value* devices such as French fry scoops or pre-dosed medication units and *motion step* devices such as airline lavatory doors or in-store security tags.
- 6) **Deming Cycle.** This is abbreviated to **PDCA** – **Plan** (What is needed?) **Do** (Try out on a small scale) **Check** (Does it work?) **Act** (Implement and standardise). This cycle can sometimes be simplified to Check (what is going on) Plan (to improve it) Do (make the improvements).

Take away message: If you can see it you can improve it.

WASTE

REMOVING EXCESS

IMPROVING CUSTOMER QUALITY

Within any business there is going to be some excess, which if removed can improve business performance. Stock levels can be reduced, quality can be increased, capacity can be freed up and on-time deliveries can be improved. All this leads to better use of working capital, more satisfied customers, an increased capacity to service new business and an increase in moral as staff spend more time adding value to the end product. Ask your team: "What is the bare minimum we need?"

Taiichi Ohno, who developed the Toyota Quality System described 7 key wastes, which are referred to in Japanese as *Muda*. The opposite of waste is *adding value*, which implies doing something which the customer is prepared to pay for. Adding value improves quality, whereas waste reduces it, from the customer's perspective.

The 7 Wastes are:

- 1) Overproduction** – increases costs by making too much, too early, just in case. This discourages smooth flow, leads to excessive lead times and excess shortages of raw materials. Over production also ties up resources and hides problems.
- 2) Waiting** – delays to value adding work waste time and money. Goldratt noted that "An hour lost at the bottleneck is an hour lost by the whole plant." Think about what else could be done in the same time and how scheduling can be improved. Ask: "Where are our bottlenecks?"
- 3) Transporting** – moving things around does not add value to them. Manual handling of parts is wasted effort. The same applies to moving bits of paper round a business. It can be quite revealing to measure how far a purchase order travels round an office. Transporting things ties up people and resources and increases the chances of loss or damage.
- 4) Inappropriate Processing** – increases the cost of a product. For example using one machine instead of many can lead to poor layout, reduces flexibility and is often referred to as 'a sledgehammer to crack a nut'. It may be expensive to use the 'one mega-machine' for all tasks when simpler tasks could be performed by simpler machines. Ensure all processing is streamlined and use the right tools for the job. Also if a machine is not capable of producing the correct quality then it is also a source of inappropriate processing. In an office, are lengthy computer based reports run when a quick manual calculation would suffice?
- 5) Unnecessary Inventory** – ties up cash and stocks, which risk being damaged or becoming obsolete. This is the enemy of productivity and quality as it covers up problems. When there is always 'another one on the shelf to use' there is no incentive to find out the root cause of problems and the 'true cost' of production remains obscured. How much cash is tied up by holding too many piece parts, or is sat gathering dust in the stationary cupboard?
- 6) Unnecessary Motions** – wastes time and money. Think about the ergonomics of your working environment and find out how much time is spent 'bending and stretching' to reach for items or to fit parts. How could the quality of your working environment be improved?
- 7) Defects** – are costly in terms of time and materials. Defects also contain all the other 6 wastes because all resources put into producing the defect item are wasted. Take time to analyse the root cause(s) of the problem, systematise them, publicise them and invest energy into ensuring they are permanently removed from the system.

Take away message: Everything which does not add value is waste.

WASTE REDUCTION

GETTING RID OF EXCESS

TYPES OF WASTE

1. **Overproducing** - making too much.
2. **Waiting** - hanging around.
3. **Transporting** - moving boxes does not add value to products.
4. **Inappropriate processing** - adding extra details the customer will not pay for is a waste of time.
5. **Over stocking** - ties up cash and you waste time looking for things.
6. **Unnecessary movement** - local ergonomics, eg office layout, poor desk layout, too much bending, twisting or walking.
7. **Making defective products** - this is a huge waste as it contains the six other wastes listed above.
8. **Human potential** - not tapping into the skills you have.
9. **Chargeable space** - paying for excess space or walking too far in too big a building.
10. **Unnecessary complexity** - wasting time by going overboard with the detail.
11. **Pollution** - how much time do you spend tidying up?
12. **Excess energy consumption** - turn off those lights!



PROCESS IMPROVEMENT PLAN

7 Easy Steps to Take

1. Collect your frustrations
2. Name the processes: think big and small
3. List / Map an easy process
4. Cut out the waste: £50 deals / remove NVAW
5. Celebrate success
6. Publicise new ways of working
7. Keep going

Map It / See It / Sort It

- ✓ Name a process
- ✓ Draw it out
- ✓ Think about 1) manpower 2) machines 3) methods 4) materials 5) minutes
- ✓ See the waste
- ✓ Reorganise to remove the waste



Process Thinking

"If you can't measure it, you can't manage it."

"Anything above the absolute minimum is waste."

"If you can see it you can save it."

Ask yourself: "What do I see?"

WORKPLACE ORGANISATION

GOOD HOUSEKEEPING REDUCES WASTE

Take time to organise your workplace. The benefits include saved time, reduced defects and increased customer satisfaction, improved health, increased pride and greater productivity.

The FIVE STEP Plan

There are five steps to take to successfully reorganise your workplace environment, in order to reduce the amount of time spent tripping over things, looking for things or buying 'some more' because items cannot be found!

Step 1) SORT – Cleanup to get started.

Remove all items which are not needed, within a period ahead. Such items lead to waste through extra searching, or walking around. Consider your desk – do you constantly shuffle through the same pieces of paper?

Step 2) SIMPLIFY – Orderliness is King.

“A place for everything and everything in its place”. Organise things so they are easy to hand, are labelled, classified and easily visible. Shadow boards are good for tools, put books on shelves, colour code pipes and charts. Have specific places for stock and don't overfill the space allowed!

Step 3) SWEEP – Clean and check regularly.

Do it yourself on a regular basis. Avoid delegating to the cleaner – your workplace is your responsibility. Keep it clean and be proud of it. Include machinery and make routine maintenance checks. Allocate responsibilities so people clearly know who is responsible for which item, e.g. the printer, the copier, the coffee corner.

Step 4) STANDARDISE – Get into good habits.

Establish and maintain good workplace standards. Ensure the first 3 steps have been completed. Make sure standards are written (never verbal) and include diagrams or photos. Remember to include good health and safety routines, e.g. wearing safety glasses, or gloves.

Step 5) SELF-DISCIPLINE – Keep up the momentum.

Ensure activities are kept going and standards are maintained. Make sure Management is playing a full role in monitoring things. Prevention is the key to success, so set up regular checklists, e.g. at the start of each shift. Use incentives to encourage people to stick to procedures and routines and include both service and manufacturing departments.

Think about your workplace:

Question 1 – What causes you frustration?

Question 2 – What could you do to improve your workplace organisation?

Question 3 – What elements of your work would you like to eliminate / simplify / combine?