Dump the Waste!

Sharpen your Competitive Edge by Eliminating Non-Value-Added Activities in your Organization

Recession or boom, companies need to sharpen their competitive edge by applying Lean Management principles to cost reduction - that is, the elimination of non-value-added activities or waste from the value stream processes.

Be lean

In the Lean Management philosophy, all activities in an organization are grouped into two categories:

- value-added (VA) activities, a
- non-value-added (NVA) activities.

In the context of Lean Management, VA and NVA activities are viewed from the customer perspective.

VA activities are those that bring higher value to products and services. Examples are answering customer queries, entering orders, ordering materials, laying foundation, creating codes, assembling parts, shipping of goods to customers, etc.

Customers are willing to pay for these improvements which can change the form, fit or function of a product or service.

On the other hand, NVA activities are tasks that do not increase market form or function.

Examples are filing, copying, recording, waiting, counting, checking, inspecting, testing, reviewing and obtaining approvals. These activities should be eliminated, simplified or reduced as much as possible.

By tackling waste from an end-to-end business process, not only can your company improve the value of its products and services, you can also achieve significant cost reduction, strengthen cash flow and emerge from the downturn with a stronger and more competitive profile.

Eight types of waste

There are eight types of waste in a manufacturing environment. Studies have shown that in a typical organization, some 90% or more of all activities fall into the NVA bucket. Although the explanations and examples provided below may be more relevant for manufacturing industries, the concepts can be universally applied to service industries as well.

The eight types of waste are:

1. **Waiting** – This is the idle time resulting from waiting for materials and information, email queues from customers, delayed shipments, lot processing delays, capacity bottlenecks, unbalanced workload, long setup times, equipment or system downtime and so on.

2. **Over-Processing** – This results from unnecessary procedures due to undefined customer requirements, lack of effective communication, product changes without process changes, redundant approvals, making extra copies and excessive reporting.

3. **Defects** – These are errors, mistakes, scrap, rework, replacements, re-inspection and re-testing. The causes are incorrect data entries, poor quality, weak process control, inadequate training, deficient planned maintenance and customer needs that were not understood.

4. **Excess Motion** – Refers to any movement of people or machine that does not add value to the product or service. Common causes are poor plant or office layout, double handling, inconsistent work methods and poor workplace organization.

5. **Transportation** – This refers to the transporting of parts, materials and files or documents around the plant or office. The causes are poor plant or office layout, widely spaced equipment and workstations and poor understanding of the process flow.

6. **Over-Production** – This happens when you make too much, too early and faster than is required by the next process. The causes include unclear goals, excessive lead times, and outdated forecasts. Tip: You should reduce your batch size to match the rate of demand. Produce exactly to customer demand, not more.

7. **Excess Inventory** – This happens when you have more inventory than is needed for a job. It is important to tackle excess inventory as it has a huge impact on cash flow. Tip: Review your materials purchasing strategy – where can you buy them at a cheaper price, in smaller amounts and can be delivered to you more frequently?

8. **Intellect** - This refers to not utilizing the time and talents of people. Examples are not engaging or listening to employees in finding solutions; lack of information or best practice sharing across the organization; mismatched work functions with skill sets.

Eliminate the waste

The ability to find waste in your organization is the first step towards their elimination.

The next step is to set up problem solving teams and enable them to reduce or eliminate the waste. A common problem solving technique is the PDCA (Plan-Do-Check-Act) approach.

Involve your employees in problem solving or process improvement. If they know that they are an active part of the solution, they can identify sources of waste or savings that you might not be aware of.

Do note that not all waste is of equal importance. You will need to identify the “right waste”– those that have the greatest impact on the business case or bottom line.

Continuous process

For waste elimination to be successful and sustainable, an organization’s senior executives need to adopt a mindset that cutting waste to cut costs is an on-going journey of continuous improvement.

It has to be a collaborative effort between management and employees.

A common mistake for senior executives to avoid is to treat waste elimination as another one-off “tool” or quick fix.

It is essential to manage waste elimination as a strategic change initiative that is aligned to the organization’s purpose, encompassing

both people and process transformations.

Allan Ung, Managing Consultant, OEC, Singapore

Lean Quality Circle

Concept
LQC is applied to turn out large number of small projects to meet company's objective / goal. Hence this is an acid test for those who have formed QC for their self and mutual development and have learnt to analyze and solve the problem.

Identification of Problem
Problems can be taken from the problem bank. Instant problem can also be taken. LQC mainly concentrates to take the project resulting in value addition or reduction / elimination of different types of wastes aligned to company's goals.

Problem Selection
Anyone can select the problem from problem bank or with his / her own initiative any problem relating to loss of quality, production loss, wastage reduction, non-value adding processes etc. and consensus arrived at.

Meetings
Frequency of meeting is not defined. Meetings are based on project needs. It may be even three times in a day. Place of meeting may be location where the problem has occurred.

Problem Solving Steps

Follow the 5 steps of DMAIC Process Problem Solving approach.

1. **Define** of Problem
2. **Measure** the Problem
3. **Analyze** the problem to find out the root cause.
4. **Improve** (solution)
5. **Control** – Standardize the new method and control at new level.

Approval of project
LQC's, project also will have to be approved by the Steering Committee or the executives nominated by the Steering Committee.

Gains
In the case of LQC's, it is directly measurable with respect to organizational goals in terms of not only process improvement, but also improvements in quality, cost reduction and faster delivery. So this reflects on the bottom line gains.

LQC – DMAIC Steps

Define (Similar to Step 3 of 12 Step PSP)

- Problem definition Crisply
- State the Current Situation
- How it affects the process
- Impact of it on - Time, money etc.
- What is proposed to be achieved (Objective) – reduction in waste etc.
- By What time it will be achieved.

Measure (Similar to Step 4 of 12 Step PSP)

- Use 4 W + 1H technique to measure the problem.
- What all team must know about the problem
- What kind of data should be collected
- From Where data should be collected
- Who should collect the data
- How much data should be collected?

This will help in knowing the problem with facts.

Analysis (Similar to Step 5, 6 & 7 of 12 Step PSP)

- Analyse the process to determine root causes of variation, poor performance (defects).
- Depending on the nature of the problem use relevant Analytical Statistical Tools / Techniques to identify the root cause.

Improve (Similar to Step 8, 9,10 & 11 of 12 Step PSP)

- Improve process performance by addressing and eliminating the root causes.
- Develop Solution and implement.

Control (Similar to Step 12 of 12 Step PSP)

- Control the improved process and future process performance.
- Standardize the new method and control at new level.

What is Jidoka? : Definition and Meaning

Jidoka is a quality control principle that gives machines or processes the ability to detect and report abnormal conditions. Also known as autonomation, it bestows upon machines and processes a **human-like intelligence** in order to prevent avoidable defects from being produced.

Jidoka is supported by four key components of quality assurance:

Genchi genbutsu: This Japanese term means 'going to the source' of a problem to see it first-hand. It is a necessary activity for acquiring an intimate understanding of the problem before setting out to solve it.

Andon:

These are signalling devices within the Jidoka system that give an alert when an abnormality occurs. Line operators have the authority to stop the line when a problem occurs, while management have the responsibility to ensure that the problem has been solved before restarting.

Step by Step Implementation:

An organizational system is never static and should be continuously evolving. The same applies for autonomation which is a continuous cycle of learning and improvement in response to different situations that may be encountered in the production process. The Jidoka cycle involves the following steps:

Detect the problem - There are many ways of detecting problems with the jidoka principle in mind. These include devices inside of machines that detect errors, setting of **takt time** standards, kanbans and visual controls. Missing kanbans will be a sign that there is overproduction or non-compliance with set standards. Visual controls will communicate the problem when it occurs.

Stop the process: Once the visual controls have communicated the presence of a problem, this triggers the action of stopping the line to investigate. As drastic as it may seem, the concept of stopping the line when an abnormality occurs is necessary so as not to pass defects to the next process.

Correct immediate condition:

Temporary countermeasures are taken so that production may continue. These may include increasing staff, kanban or work-cells. Care should be taken to prevent temporary countermeasures from breaking the production system that is in place. Supervisors should monitor these so as not make staff lose faith in the production system.

Do 5 Whys analysis:

A root cause analysis is carried out to get to the core of why the problem occurred. Temporary countermeasures were used to cover the surface problems so that production can continue uninterrupted. By asking the 5 whys, the deeper causes of the problem are brought to the surface.

Implement corrective action:

After the real cause of the problem is found, countermeasures are developed that will prevent recurrence of the same problem.

Standardization:

Standards are the basis of continuous improvement, quality and consistency. The use of standards ensures smooth production flow.

Mistake-proofing:

Poka-yoke devices within the production process are aimed at preventing errors from occurring in the first place.

These four concepts are the foundation for successful implementation without which the program will fail.

Autonomation is not an aim in itself, but is part of a comprehensive lean thinking philosophy that incorporates a variety of tools to achieve a truly lean enterprise.