

Lean

Lean management is focused on adding value to the customer by achieving lower cost, faster delivery times, higher flexibility and better quality.

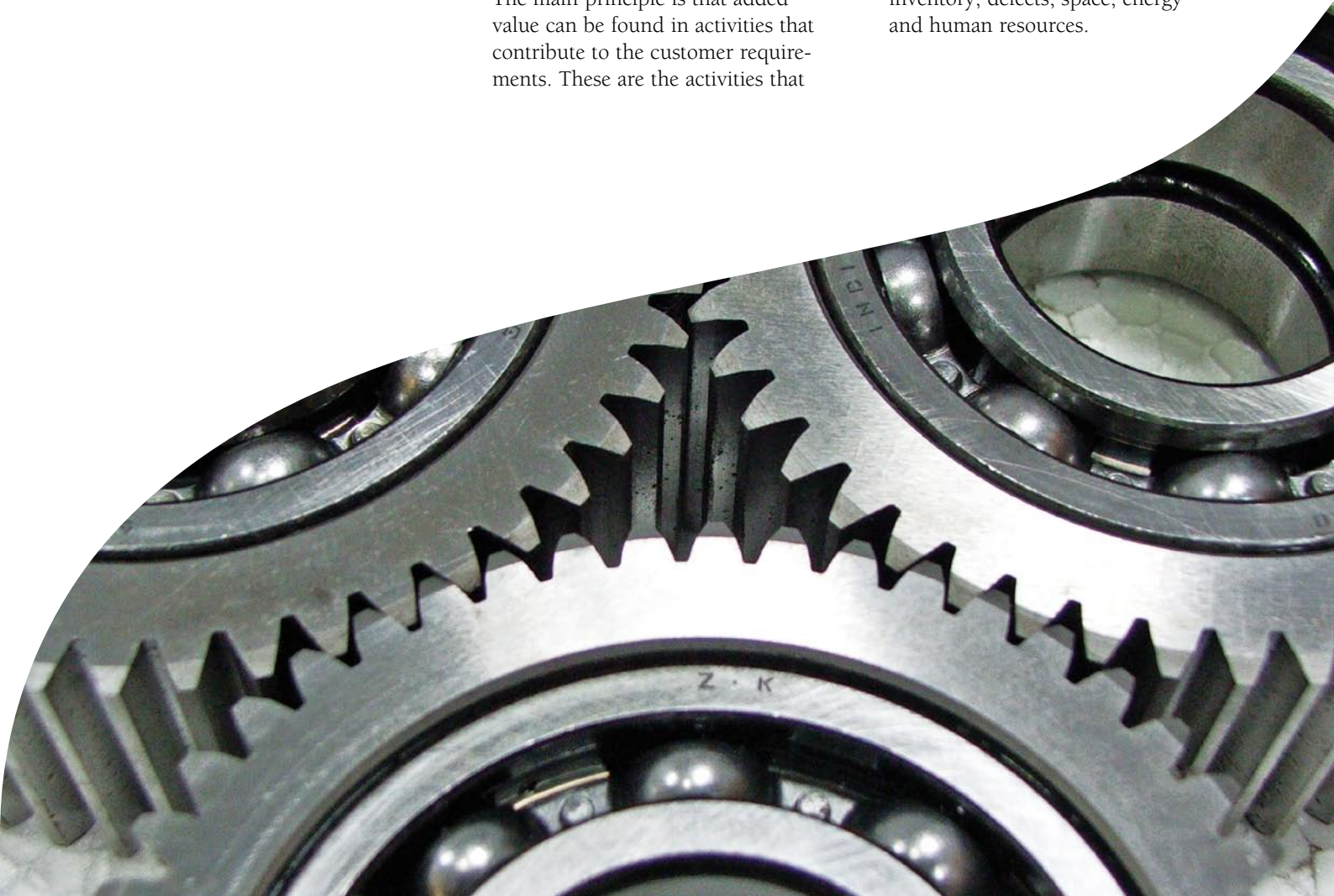
Introduction

The key principle of the Lean management is to only focus on activities that add value to the process. Lean aims to eliminate all non-value adding activities and waste from the business process.

A key question in Lean is: What and to whom is an activity value-adding? The main principle is that added value can be found in activities that contribute to the customer requirements. These are the activities that

customers are willing to pay for or specifically, customers increasingly will not pay for waste. Non-value adding activities, which can be regarded as waste, should therefore be eliminated.

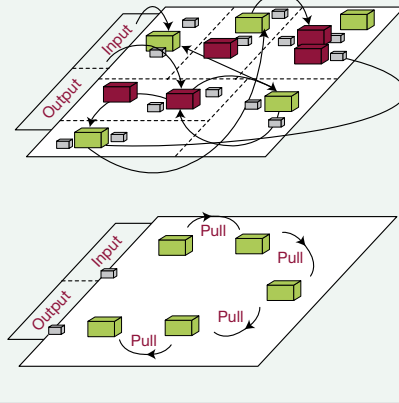
Waste can be found in a multitude of factors: overproduction, motion, transport, waiting, processing, inventory, defects, space, energy and human resources.



Operational Excellence Framework



The result of VSM flow and pull



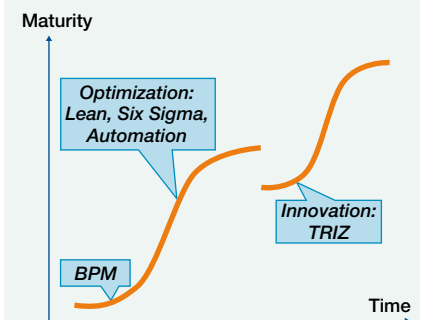
It aims to set up a process that is virtually error-proof by forcing the correct execution of every activity. This concept has been introduced by Shigeo Shingo as part of the Toyota Production System.

Capgemini's way

Process Maturity

Capgemini's process maturity thinking helps us to adopt the most appropriate improvement mechanisms for business processes in any maturity stage. With this we mean that not all processes are ready for the same approach: some need a process management system (e.g. new processes), others need improvement using Lean and/or Six Sigma and others, that have reached maximum incremental improvement need a more radical approach based on innovation.

Process Maturity Matrix



Lean Sigma

Capgemini always incorporates Lean with Six Sigma. Combining the increased speed of Lean and the quality aspects of Six Sigma generates the following benefits:

Integration

An important Lean technique is Value Stream Mapping and waste analysis. Once completed, this can be used to initiate one to more Six Sigma optimization projects.

Lean principles

We have included a selection of the main Lean principles.

Value stream mapping

VSM aims to undo a business process of all forms of waste, based on waste analysis.

Line balancing / Flow

Line balancing is aimed at streamlining the usage of all resources in a process. A balanced process means that supply and demand have been aligned in such a manner that no one employee is waiting for the other. The goal is to have one standard calculation measure for each phase (Takt time).

Once a process has started, it should be completed in a single flow. Flow implies a batch of one. Conversely a stop-start process results in handling, stocking, waiting and moving; thus unnecessary effort.

Pull

Waste can be reduced significantly when changing a business process from a 'push' system to a 'customer pull' system. The push system attempts to predict future demand. It then obtains materials and pushes them into the delivery process, resulting to inventories. With the pull system, the consumption downstream authorizes the delivery upstream.

Implementation of a pull process leads to increased agility to meet unpredictable customer demand.

Kaizen 改善

Translated, Kaizen means change (Kai) to improve (zen) or continuous improvement. Kaizen is a daily activity aimed at more than just process improvement: it incorporates teamwork, discipline, involvement and learning ability, which is all arranged for in the workplace. Kaizen strives to eliminate waste, achieve good housekeeping and standardized performance through constant process analysis.

Kaizen continuous improvement is based on three basic principles: non-judgmental, systematic thinking, and process & results. Unsuccessful implementation of Kaizen may lead to Kaiaku, meaning change for the worse.

JIT / Kan Ban 看板

JIT aims to align purchasing and production in such a manner that no inventory is needed. Delivery occurs at the exact time it is required: not earlier, not later. Nothing is manufactured unless there is a signal (Kan Ban) to manufacture.

Poka-yoke ポカヨケ

Poka-yoke is a Japanese term that can be interpreted as preventing (yoke) an accidental error (poka).

Acceleration

Within a Six Sigma project, specific Lean techniques can be used to accelerate the project (Kaizen events).

Efficiency

Throughout the Six Sigma phases (Define, Measure, Analyze, Improve, Control), specific tools can be used to boost efficiency within the project, especially in the improve phase.

Pragmatism

In parallel with the project stream, a pragmatic approach is recommended, for example application of the 5S's to organize the delivery environment.

This results in an approach with the following phases:

1. *Determine value:*

Finding out what is value to the customer and value to the business is the starting point of the Lean Six Sigma approach.

2. *Conduct high level Value Stream:*

Mapping (VSM), select projects and develop a clear workplan to reach the future state. Based on what is value, the business process is assessed by pointing out all that is waste, focusing on value adding activities.

3. *Prepare the organization:*

There are some organizational matters that need to be addressed:

- a. The application of visual management principles to create visibility regarding performance, successes, problems, the work area, et cetera;
- b. The use of 5S (sort, stabilize, shine, standardize, sustain) to clear the way for process improvement;
- c. The creation of an organization structure that will support the Lean Sigma initiatives at all levels, including an integrated cross functional team that is responsible for the entire delivery process;
- d. The training of the people involved to enable in applying the Lean Sigma methodology.

4. *Improve the process:*

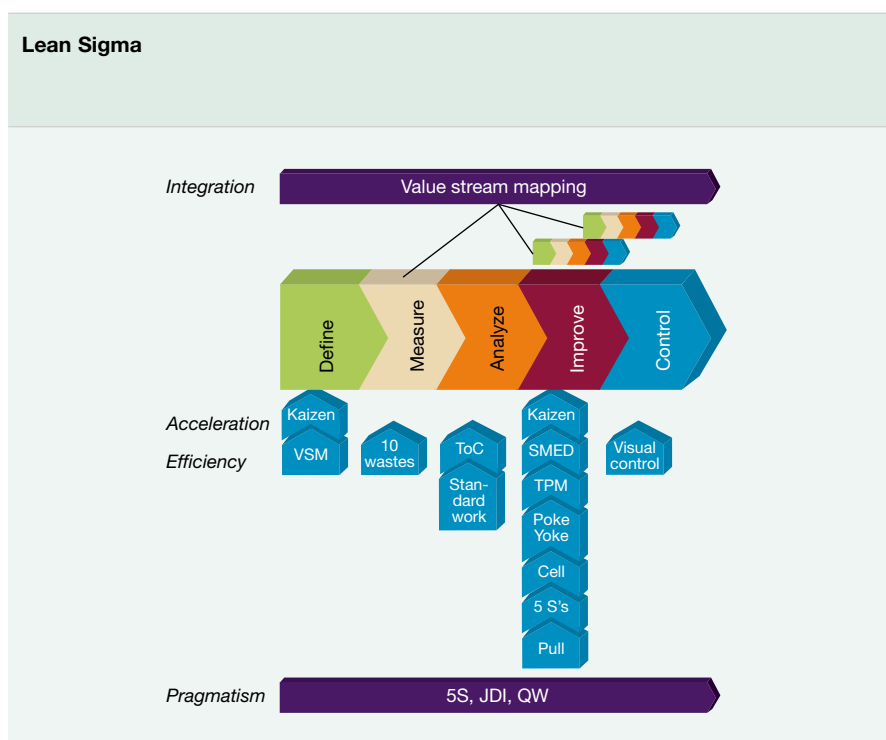
In this phase the business process is tackled with techniques to achieve the desired efficiency and effectivity. Pull is applied to establish a customer driven process. Flow and JIT (just-in-time) are applied to deliver a smooth delivery process.

5. *Seek perfection:*

To gain a higher quality and/or to solve a complex improvement

challenge, six sigma techniques are applied.

In addition, Kaizen can be used to sustain and further improve the process on a frequent basis.





About Capgemini and the Collaborative Business Experience

Capgemini, one of the world's foremost providers of Consulting, Technology and Outsourcing services, has a unique way of working with its clients, called the Collaborative Business Experience.

Backed by over three decades of industry and service experience, the Collaborative Business Experience is designed to help our clients achieve better, faster, more sustainable results through seamless access to our network of world-leading technology partners and

collaboration-focused methods and tools. Through commitment to mutual success and the achievement of tangible value, we help businesses implement growth strategies, leverage technology, and thrive through the power of collaboration.

Capgemini employs approximately 68,000 people worldwide and reported 2006 global revenues of 7.7 billion euros.

More information about our services, offices and research is available at www.capgemini.com

Continental Europe

Capgemini Nederland B.V.
Papendorpseweg 100
3528 BJ Utrecht

Western Europe

Cap Gemini S.A.
Place de l'Etoile
11 rue de Tilsitt
75017 Paris

North America

Capgemini U.S.
750 Seventh Avenue
Suite 1800
New York, NY 10019

Asia Pacific

Capgemini India
SEP2-B3, Godrej Industries Complex
Eastern Express Highway
Vikhroli (E)
Mumbai 400079