



BUSINESS VITAMINS

Lean Six Sigma DMAIC process

Introduction

Six Sigma (6σ) is a set of management techniques intended to improve business processes by greatly reducing the probability that an error or defect will occur.

It was first introduced at Motorola in 1986 by American engineer Bill Smith along with several other people including Dr. Mikel Harry and CEO Bob Galvin, they developed the idea and term Six Sigma to significantly reduce product defects while working.

Sigma (σ) is a Greek letter and symbol defining the standard deviation of a population. By adding and subtracting the value of three standard deviations to the mean or average of your data, you should encompass approximately 99.73% of your data, according to the Empirical Rule and relates to the Normal Distribution.

A process is often described as being Six Sigma if the closest specification is at least six standard deviations away from the mean. If your specification is that far away, then Six Sigma will be defined as a process having 3.4 defects per million opportunities (DPMO). Lean Six Sigma developed as a specific process of Six Sigma, and it is a method that relies on a collaborative team effort to improve performance by systematically removing waste and reducing variation. It combines lean manufacturing/lean enterprise and Six Sigma to eliminate the eight kinds of waste (muda)

Under Lean Six Sigma's umbrella, there is a plentiful of different processes that are used and utilized to get to the bottom of the process improvement – there's the DMAIC, the DMADV, the Five Whys, the Fishbone or the Ishikawa Tool, and many more. Among these many processes, the DMAIC stands out and it's considered as one of the most used and the most recognized processes for BPI

DMAIC Definition

DMAIC is the problem-solving approach that drives Lean Six Sigma. It's a five-phase method—Define, Measure, Analyze, Improve and Control—for improving existing process problems with unknown causes. DMAIC is based on the Scientific Method, and it's pronounced “duh-may-ik.”

When to use DMAIC

DMAIC is used by a project team that is attempting to improve an existing process. DMAIC provides structure because each phase of the process contains tasks and tools that will lead the team to find an eventual solution. While DMAIC may be sequential, it is not strictly linear. The process encourages project teams to backtrack to previous steps if more information is needed.

DMAIC process Details

The phases or stages of DMAIC include:

Define (D) – The project begins by creating a team charter to identify team members, select the process the team will be improving and clearly define the objective of the project. The project team will then identify the CTQs to help measure the impact the problem has on the customer. This phase is completed when the team creates a process map that includes the process's inputs and outputs.

Measure (M) – This phase includes creating and executing a data collection plan that provides reliable and significant data. The data indicates how the process is performing and helps identify the villain in the Six Sigma narrative – variance. After this point, the project team's efforts focus on eliminating or reducing variance as much as possible.

Analyze (A) – Once process performance has been quantified, the analyze phase of DMAIC helps identify possible causes of the problems. A sub-process map can help identify the problems in the process and tools such as ANOVA and regression analysis can help narrow these problems to root causes. In this phase, the team is able to quantify the financial benefit of solving the problem.



Improve (I)– Once the problem’s root cause is brought to light, the improve phase focuses on finding a permanent solution to the problem. This is where the project team’s creativity comes into play in finding an answer to a longstanding process problem. The team then tests a proposed solution in a pilot program to test if the solution is effective and financially viable.

Control (C) – In this phase, the project team documents the new solution that they have created so that it can be passed on to process owners. The project team then implements the solution according to the timeline and key milestones they have developed. Once the solution has been implemented, the project team monitors it for several months and if it meets performance expectations turns it over to the process owner.

EXAMPLES:

DMAIC methodology can be used in different situations from day-to-day issues to the most complex goals (Whenever you have a Problem you want to solve / Whenever you have a Goal that you want to achieve).

- Baking your perfect bread
- Solving the sales decrease from your e-commerce site
- Improving the productivity of service team.
- Strategies for Improving Patient Safety in the Hospital
- Minimizing the defected products during manufacturing.
- Establishing higher rate of customer satisfaction in call center.

