

# DMAIC: The 5 Phases of Lean Six Sigma

Define, Measure, Analyze, Improve, and Control



# Intro: What is Lean Six Sigma?

Lean Six Sigma is simply a process for solving a problem. It is a system of management that results in a steady pipeline of projects that are ready for improvement.

It consists of five phases, aka DMAIC (“duh-may-ik”):  
Define, Measure, Analyze, Improve, and Control

Lean Six Sigma provides guidelines to help you select the right projects at the right time.

Once projects are selected, improvement teams use DMAIC to refine projects & deliver quantifiable, sustainable results.

# Selecting the Right Projects

Before beginning a Lean Six Sigma process improvement project, choose projects that are good candidates for improvement.

A good project for improvement:

Has an obvious problem within the process.

Has the potential to result in increased revenue, reduced cost, or improved efficiency.

Has collectable data.

# DMAIC:

Define, Measure, Analyze, Improve, Control



**DEFINE**

Define the problem.



**MEASURE**

Map out the current process.



**ANALYZE**

Identify the cause of the problem.



**IMPROVE**

Implement and verify the solution.



**CONTROL**

Maintain the solution.

# DMAIC Phase 1: Define

The Define Phase is the first phase of the Lean Six Sigma improvement process. In the Define phase, Project Leaders create a “Project Charter”. It consists of:

A “Problem Statement”: Defines the problem.

A “Goal Statement”: Defines the goal.

Maps of the Process: Defines the process.

A definition of the Customer, and their requirements.

# DMAIC Phase 1: Define

A “Problem Statement” defines the problem. It:

Confirms the process is causing problems.

Confirms the problem is high priority & has a high impact:

1. Severity: How big is the problem?
2. Business Impact: What is the pain felt by the business?
3. Specific Area: What department or units are involved?

Confirms resources are available.

# DMAIC Phase 1: Define

A “Goal Statement” defines the goal. It:

Is a direct reflection of the Problem Statement.

Defines measurable, time-bound terms of exactly when the team and project will be considered successful.

# DMAIC Phase 1: Define

## Develop Maps of the Process:

Begin with a high-level process map, aka “SIPOC”:  
(Suppliers, Inputs, Process, Outputs, and Customers).

Conduct detailed mapping.  
This can be done with Swim Lanes (lanes representing departments), or a simple flow-chart.



# DMAIC Phase 1: Define

Define your customer and their requirements:

Customers are individuals or groups who receive the goods or services of the process.

Customers can be external to the organization, or an internal component of the organization.

Customers must be contacted by the team to understand the "Voice of the Customer": the process requirements.

After contacting the customer, the team must translate the information into measurable requirements.

# DMAIC Phase 2: Measure

In the Measure phase, the team focuses on data collection, which takes time and effort. In this phase, the team:

Establishes a Baseline: How the process currently performs.

Looks for Root Causes of Waste: What is causing problems.

Creates a plan to collect the data: Who, and how much.

Ensures reliable data: Define, Test, & Refine measurements.

Updates the Project Charter.

# DMAIC Phase 3: Analyze

In the Analyze phase, the team reviews data collected during the Measure Phase. Their goal is to narrow down and verify root causes of waste and defects. In this phase, the team:

Performs Process Analysis: examine the Value of each step.

Visually inspects the data: transforms it into charts + graphs.

Uses Cause & Effect Diagram to brainstorm problem causes.

Verifies the cause of the problem with additional analysis.

Updates the Project Charter.

# DMAIC Phase 4: Improve

In the Improve phase, teams move on to solution development. This is a structured effort that leads to innovative and elegant solutions. In this phase, the team:

Brainstorms solutions that might fix the problem.

Uses “Weighted Criteria Matrix” to select practical solutions.

Develops “To-Be Maps”: improved maps of the process.

Uses “PDCA” (plan-do-check-act): selects the best solutions.

Implements the solutions.

Measures improvement.

# DMAIC Phase 5: Control

The Control phase is the final phase of Lean Six Sigma. The team focuses on how to sustain newly achieved improvements by passing it on to other employees. In this phase, the team:

Continuously improves the process using Lean principles.

Ensures the process is managed & maintained properly.

Expands the improved process throughout the organization.

Applies new knowledge to other organizational processes.

Shares and celebrates the success.

# About Go Lean Six Sigma



Go Lean Six Sigma is dedicated to helping small- and medium-sized businesses (SMBs) increase revenue, reduce costs and improve collaboration in today's increasingly competitive economy.

For more information, please contact us at  
[contact@goleansixsigma.com](mailto:contact@goleansixsigma.com).