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DMAIC – The 5 Phases Of Lean Six Sigma

January 24, 2025

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DMAIC – The 5 Phases of Lean Six Sigma

DMAIC

VISIT: [GLSS.APP](https://goleansixsigma.com/dmaic-five-basic-phases-of-lean-six-sigma/)

DMAIC is a five-step method for improving existing process problems with unknown causes.



DEFINE
Clarify
the problem
and process



MEASURE
Quantify the
problem and
map the
process



ANALYZE
Determine
the root
causes



IMPROVE
Confirm
the solutions
work



CONTROL
Ensure
the gains are
sustained

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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



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candidates for improvement will set you up for success with DMAIC. Here are 4 key guidelines:

- Choose an obvious problem within an existing process
- Choose something that would make a difference but would not be overly complex to address ("meaningful but manageable")
- Make sure there is potential to reduce lead time or defects while resulting in cost savings or improved productivity
- Check if you can collect data about the selected process—you want to achieve *measurable* improvement

Once you've [selected a good project](#), you and your improvement team can apply DMAIC to dig into process issues and deliver quantifiable, sustainable results.

PROJECT SELECTION

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Project Selection is choosing a process improvement opportunity with the greatest impact and the most manageable effort while still aligning with organizational strategy.

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goals of organizational leadership.

PROJECT CHARTER

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A Project Charter is a living document for an improvement team that outlines the presenting problem, the target and the boundaries of a process improvement effort.

PROBLEM STATEMENT	BUSINESS CASE	GOAL STATEMENT	TIMELINE	SCOPE	TEAM MEMBERS
The problem captured in the form of a measurement	The business reasons for doing the project	The target of the process measurement	When each project phase will be completed	What's in and what's out of the project	The people who will participate in the project

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MEASURE

DMAIC Phase 2

How does this process currently perform? What is the magnitude of the problem? Measurement is critical throughout the life of the project since it provides key indicators of process health and clues to where process issues are happening.

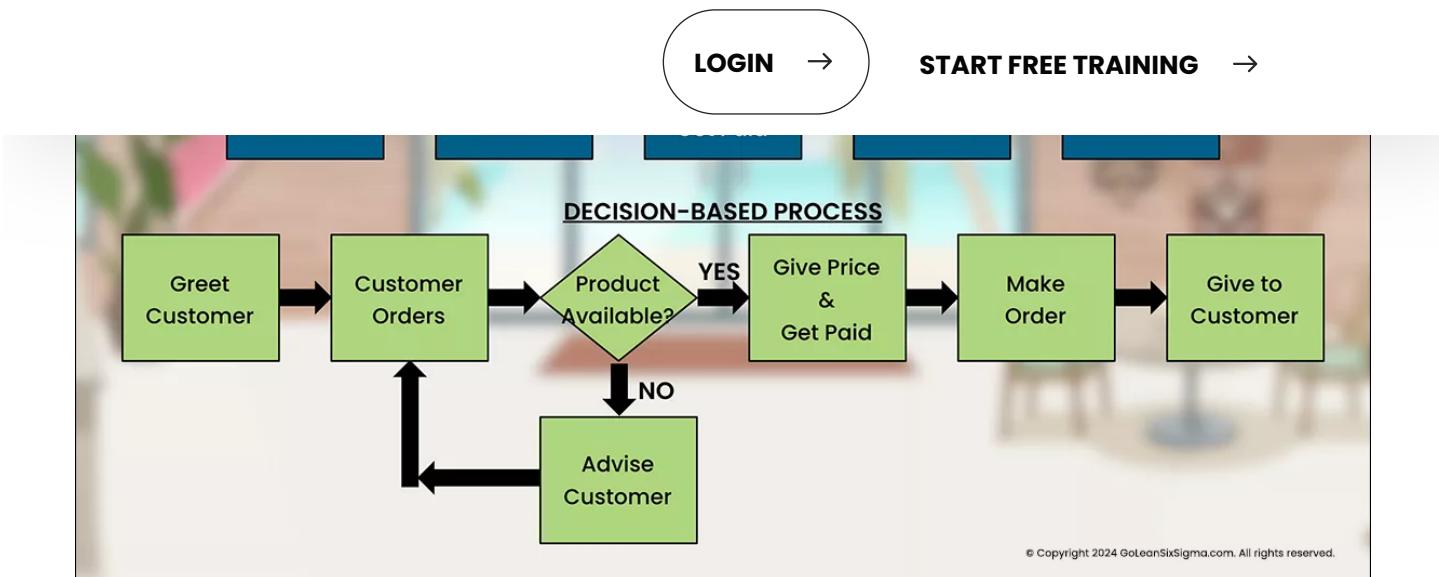


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ANALYZE

DMAIC Phase 3

What is causing the problem? One of the biggest challenges for teams is resisting the urge to jump to solutions before understanding the true **root causes** of process issues. Without proper analysis, teams can implement solutions that don't resolve the issue—this wastes time, consumes resources, increases variation and risks causing new problems. Have you seen teams do this? Yes, it happens all the time!

Instead of implementing solutions that don't solve the problem, the ideal is for teams to learn from their Process Walks, study their **charts** and graphs and use their observations to develop and confirm theories about what's causing the issue they're trying to fix. The crux of this phase is to verify hypotheses before



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IMPROVE

DMAIC Phase 4

How will the team fix the root causes of the problem? Once they have determined what's causing the problem, it's time for the team to implement plans to resolve the root cause(s).

The Improve Phase is where the team refines their countermeasure ideas, pilots process changes, implements solutions, and lastly, collects data to confirm there is measurable improvement. A structured improvement effort can lead to innovative and elegant changes that improve the baseline measure and, ultimately, the customer experience.

5S

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5S is a five-step organizing technique to create and maintain an intuitive workspace.

SORT

SET IN ORDER

SHINE

STANDARDIZE

SUSTAIN



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CONTROL

DMAIC Phase 5

How do you sustain the improvement? With improvements in place and the process problem fixed, the team must work to maintain the gains and make it easy to update best practices.

In the Control Phase, the team develops a Monitoring Plan to track the success of the updated process and crafts a Response Plan in case there is a dip in performance. Once in place, the Process Owner **monitors** and continually updates the current best method.

MONITORING & RESPONSE PLAN

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The Monitoring & Response Plan checks whether a process is performing as expected and details what to do if not.

MONITORING

TRIGGER LEVEL

RESPONSE

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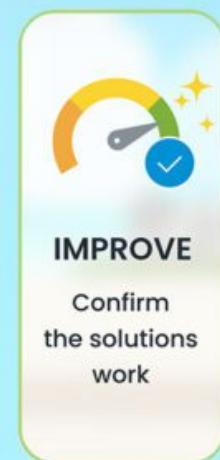
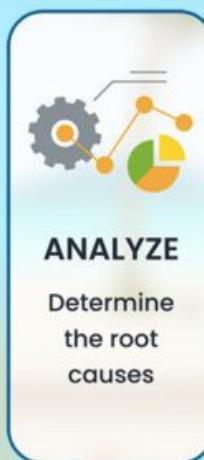
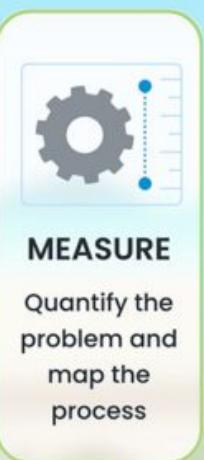


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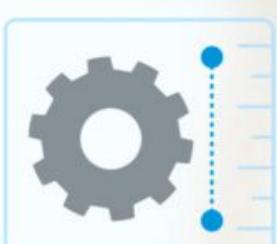
Phase 1: DEFINE



Clarify the problem and process. The Define Phase is the first phase of the Lean Six Sigma improvement process. In this phase, the project team creates a Project Charter and begins to understand needs of the customers of the process. This is a critical phase in which the team outlines the project focus for themselves and the leadership of the organization.

Tools: Project Charter, Voice of the Customer, SIPOC

Phase 2: MEASURE



Quantify the problem and map the process. How does the process currently perform? Or in other words, what is the magnitude of the problem? Measurement is critical throughout the life of the project. As the team starts collecting data they focus on both the process as well as measuring what customers care about. That means initially there are two focuses: reducing lead time or improving quality. In the Measure Phase, the team refines the measurement definitions and determines the current performance or the baseline of the process.

Tools: As-Is Map, Process Walk, 8 Wastes, Data Collection, Data Entry, Baseline

Phase 3: ANALYZE



Determine the root causes. What is causing the problem? The Analyze Phase is often not given enough attention and, without analysis, teams jump to solutions before knowing the true root causes of the issues. The result is teams who implement solutions but don't resolve the problem! These efforts waste time, consume



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Tools: 5S, Solutions, Implement, To-Be Map, Verification



Phase 5: CONTROL

Ensure the gains are sustained. How do you sustain the improvement? Now that the process problem is fixed and improvements are in place, the team must ensure that the process maintains the gains. In the Control Phase the team is focused on creating a Monitoring Plan to continue measuring the success of the updated process and developing a Response Plan in case there is a dip in performance. Once in place, the team hands these plans off to the Process Owner for ongoing maintenance.

Tools: Visual Management, Monitoring & Response, Transfer Opportunities, Project Handoff, Project Summary

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