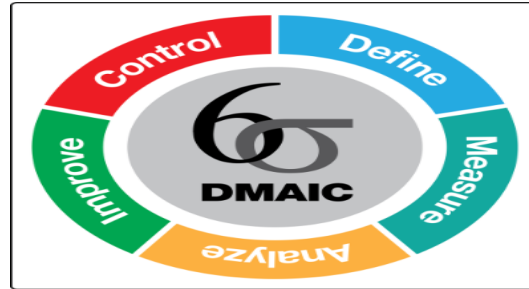


DMAIC – a Six Sigma quality tool

Six Sigma is a methodology which has the fundamental objective being the implementation of a measurement-based strategy that focuses on process improvement and variation reduction through the application of Six Sigma improvement projects.



DMAIC is a data-driven quality strategy for improving processes, and is an integral part of an organization's Six Sigma quality initiative. DMAIC is an acronym for five interconnected phases: Define, Measure, Analyse, Improve, and Control.



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DMAIC – overview

D

DEFINE

Define the problem and the ideal in terms of the target to achieve.

M

MEASURE

Collect relevant data about the process and the problem.

A

ANALYSE

Analyse the process to identify the cause-effect relationship between inputs and outputs. Identify the vital few root causes.

I

IMPROVE

Determine the optimum values for key contributing process inputs. Implement solutions to eliminate the root causes.

C

CONTROL

Establish standards and controls to sustain improvements in the long run.



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Define

Define the Customer, their Critical to Quality (CTQ) issues, and the Core Business Process involved.

- Define who customers are, what their requirements are for products and services, and what their expectations are.
- Define project boundaries - the stop and start of the process.
- Define the process to be improved by mapping the process flow.

Identify value from the customer's perspective.

Analyse the value stream & eliminate waste

Albert Einstein said:
If I had an hour to save the world, then I would spend 55 minutes defining the problem and the rest finding a solution.



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Measure

Measure the performance of the Core Business Process involved.

- Develop a data collection plan for the process.
- Collect data from many sources to identify wastes, and to determine types of defects and metrics.
- Compare to customer survey results in order to determine shortfalls.

Analyse the
value stream &
eliminate waste

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Analyse

Analyse the data collected and process map to determine root causes of defects and opportunities for improvement.

- Identify gaps between current performance and goal performance.
- Prioritise opportunities to improve.
- Identify sources of variation.
- Value Stream Mapping (VSM); 5 Whys; Fishbone; Failure Mode Effects Analysis (FMEA)

Analyse the
value stream &
eliminate waste

Make it “Flow”

Improve

Improve the target process by designing creative solutions to fix and prevent problems.

- Create innovative solutions using technology and discipline.
- Develop and deploy implementation plan.
- Use: Kaizen Events; SIPOC; Pull planning; Poka Yoke (Fool proofing); 5S; Future state mapping; Action Plans.

Make it “Flow”

Create “Pull”



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Control

Control the improvements to keep the process on the new course.

- Prevent back-slippage to previous ways of working (the “old way”).
- Require the development, documentation, and implementation of an ongoing monitoring plan.
- Institutionalise improvements through the modification of systems and structures (staffing, training, incentives, etc.).

Make it “Flow”



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