

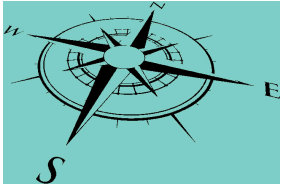
# THE DMAIC PROCESS

Define, measure, analyze, improve, and control (DMAIC) is a data-driven quality strategy used to improve processes. The letters in the acronym represent the five phases that make up the process, including the tools to use to complete those phases . .. It is an integral part of a Six Sigma initiative, but in general can be implemented as a standalone quality improvement procedure or as part of other process improvement initiatives such as lean.

## Contents

Vision.....	3
Mission.....	3
Values .....	3
<b>1. Definitions.....</b>	<b>4</b>
<b>1.1. Charters .....</b>	<b>4</b>
<b>1.2. Customer Needs.....</b>	<b>4</b>
<b>1.3. Value Streams.....</b>	<b>4</b>
<b>2. Metrics .....</b>	<b>5</b>
<b>2.1. Processes .....</b>	<b>5</b>
<b>2.2. Capabilities.....</b>	<b>5</b>
<b>2.3. Pareto Charts .....</b>	<b>5</b>
<b>3. Analysis.....</b>	<b>6</b>
<b>3.1. Root Causes .....</b>	<b>6</b>
<b>3.2. FMEA.....</b>	<b>6</b>
<b>3.3. Variations .....</b>	<b>6</b>
<b>4. Performance .....</b>	<b>7</b>
<b>4.1. Experimentation .....</b>	<b>7</b>
<b>4.2. Projects .....</b>	<b>7</b>
<b>5. Control .....</b>	<b>8</b>
<b>5.1. Plan.....</b>	<b>8</b>
<b>5.2. SPC.....</b>	<b>8</b>
<b>5.3. Visual Control .....</b>	<b>8</b>
<b>5.4. Errors.....</b>	<b>8</b>
Administrative Information.....	8

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## American Society for Quality (ASQ)

### Description:

With members and customers in over 130 countries, ASQ brings together the people, ideas and tools that make our world work better. ASQ celebrates the unique perspectives of our community of members, staff and those served by our society. Collectively, we are the voice of quality, and we increase the use and impact of quality in response to the diverse needs in the world.

### Vision

Higher quality results

### Mission

To improve processes

### Values

**Data**

**Quality**

## 1. Definitions

*Define the problems, improvement activities, opportunities for improvement, project goals, and customer (internal and external) requirements.*

### 1.1. Charters

*Compile project charters to define the focus, scope, direction, and motivation for the improvement teams*

### 1.2. Customer Needs

*Consider the voice of the customers to understand feedback from current and future customers indicating offerings that satisfy, delight, and dissatisfy them*

**Stakeholder(s):**

**Customers**

### 1.3. Value Streams

*Apply value stream maps to provide overviews of entire processes, starting and finishing at the customers, and analyzing what is required to meet customer needs*

## 2. Metrics

*Measure process performance.*

### 2.1. Processes

*Create process maps for recording the activities performed as parts of processes*

### 2.2. Capabilities

*Conduct capability analysis to assess the ability of processes to meet specifications*

### 2.3. Pareto Charts

*Apply Pareto charts to analyze the frequency of problems or causes*

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### 3. Analysis

*Analyze processes to determine root causes of variation and poor performance (defects).*

#### 3.1. Root Causes

*Conduct root cause analysis (RCA) to uncover causes*

#### 3.2. FMEA

*Apply failure mode and effects analysis (FMEA) for identifying possible product, service, and process failures*

#### 3.3. Variations

*Use multi-vari charts to detect different types of variation within processes*

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## 4. Performance

*Improve process performance by addressing and eliminating the root causes.*

### 4.1. Experimentation

*Use design of experiments (DOE) to solve problems from complex processes or systems where there are many factors influencing the outcome and where it is impossible to isolate one factor or variable from the others*

### 4.2. Projects

*Create Kaizen events to introduce rapid change by focusing on narrow projects and using the ideas and motivation of the people who do the work*

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## 5. Control

*Control the improved process and future process performance.*

### 5.1. Plan

*Compile and implement a quality control plan to document what is needed to keep an improved process at its current level*

### 5.2. SPC

*Apply statistical process control (SPC) for monitoring process behavior*

### 5.3. Visual Control

*Use 5S to create a workplace suited for visual control*

### 5.4. Errors

*Mistake proof (poka-yoke) to make errors impossible or immediately detectable*

## Administrative Information

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