

Overview of Six Sigma



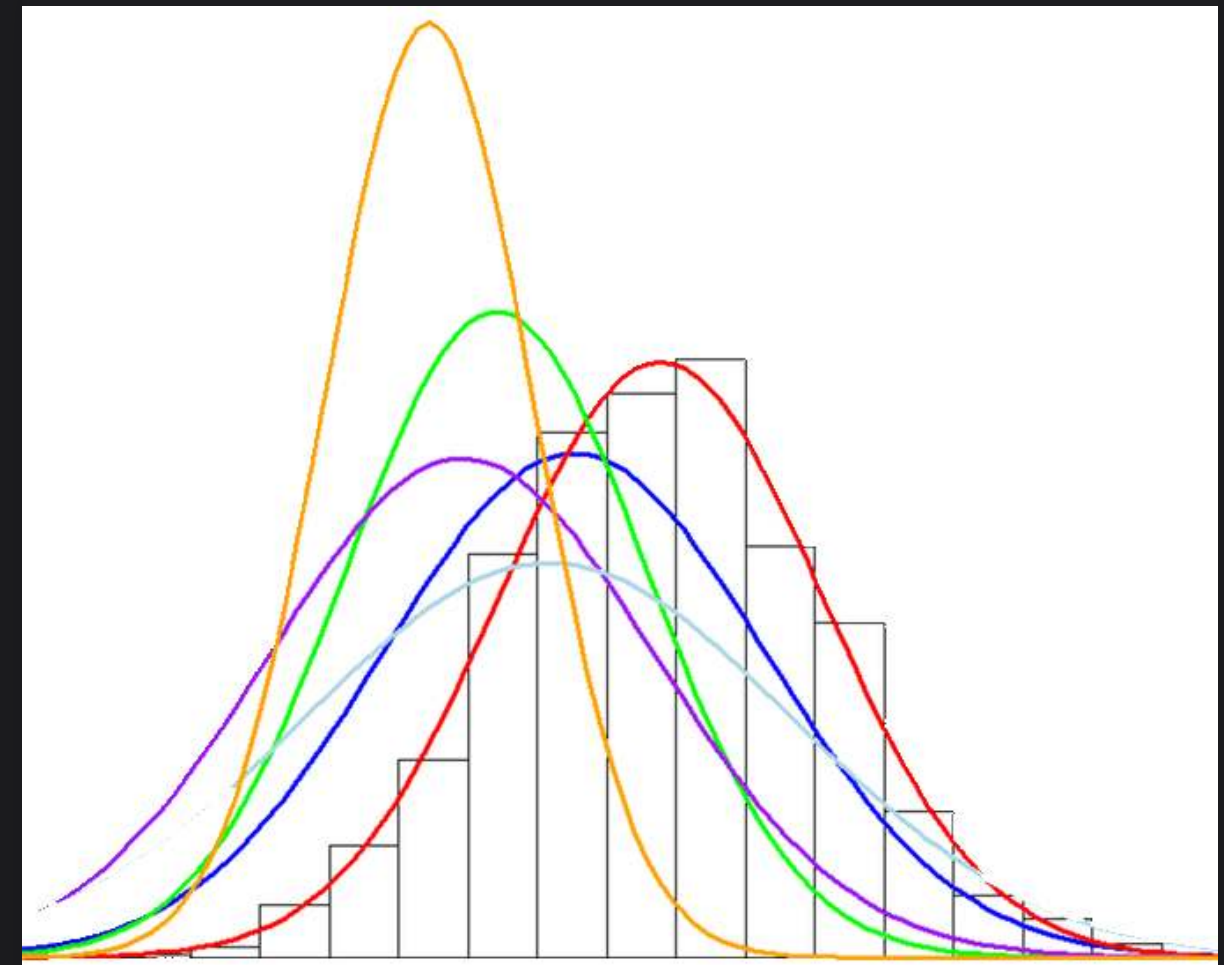
Michael Parker

In Statistics, the Greek Letter sigma (σ)

Refers to "Standard Deviation," a Measure of Variation.

In Business, Variation (σ) Exists in All Processes

Variation Occurs Naturally
and/or by Special Cause. It
Doesn't Matter if You're Creating
Widgets in Production, or Serving
Patients in Healthcare.



A Six Sigma Process

A Six Sigma Process Has **Six (6) σ** Between its Mean and the Nearest Specification Limit. There is Ample Room for Natural Variation. This Process Only Yields **3.4 Defects per Million Opportunities**.

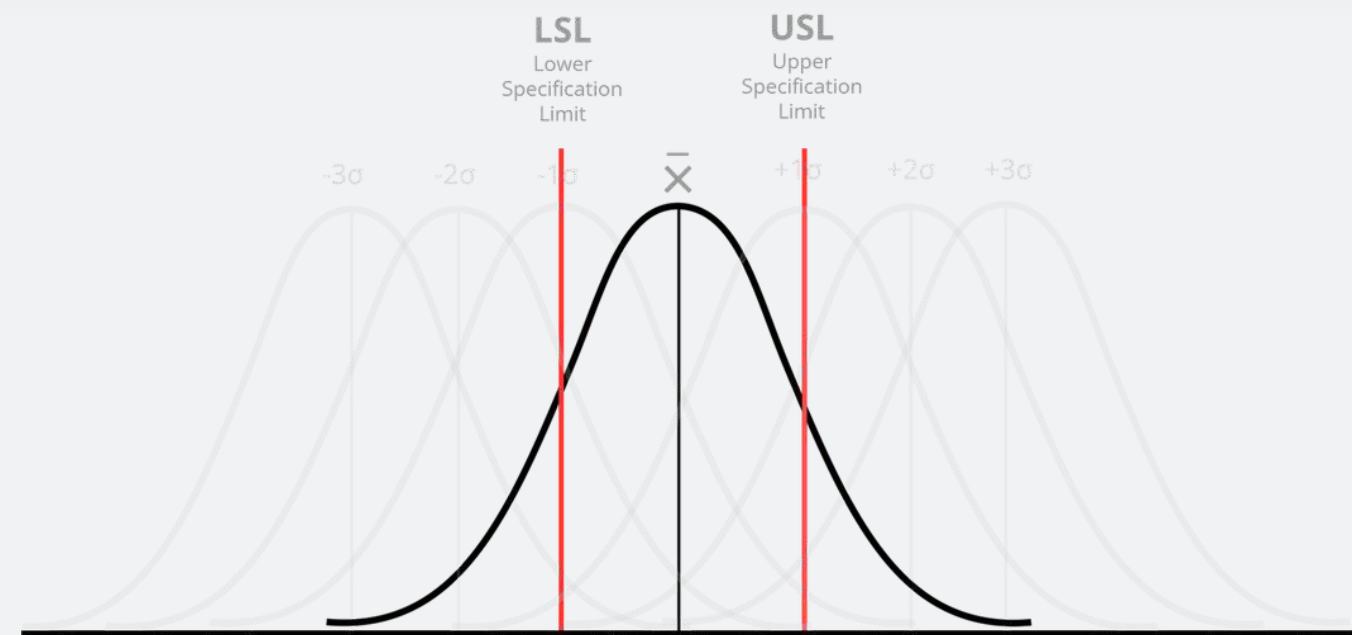


Specification Limits
Can Be Set by
Customers or
Businesses

- ✓ LSL = Lower Specification Limit
- ✓ USL = Upper Specification Limit

A One Sigma Process

A One Sigma Process Has Only One (1) σ Between its Mean and the Nearest Specification Limit. There is No Room for Natural Variation. This Process Yields Nearly 70% Defects.



Specification Limits
Can Be Set by
Customers or
Businesses

- ✓ LSL = Lower Specification Limit
- ✓ USL = Upper Specification Limit

In Six Sigma:

Sigma (σ) is the Measure.

Six (6) is the Goal.

D.M.A.I.C is the
Method...

D.M.A.I.C. is a Project Management Methodology.

D.M.A.I.C. is Used When We Don't Know the Answer.

Otherwise, Use a Traditional Project Management Method Like Waterfall or Agile.

D.M.A.I.C. Methodology

Six Sigma follows a methodology that is conceptually rooted in the principles of a five-phase project. Each phase has a specific purpose and specific tools and techniques that aid in achieving the phase objectives.

Control Phase Objective

Set Controls, Monitor,
and Maintain Solutions

Improve Phase Objective

Design and Develop or Test Solutions.
Validate & Implement Solutions

Define Phase Objective

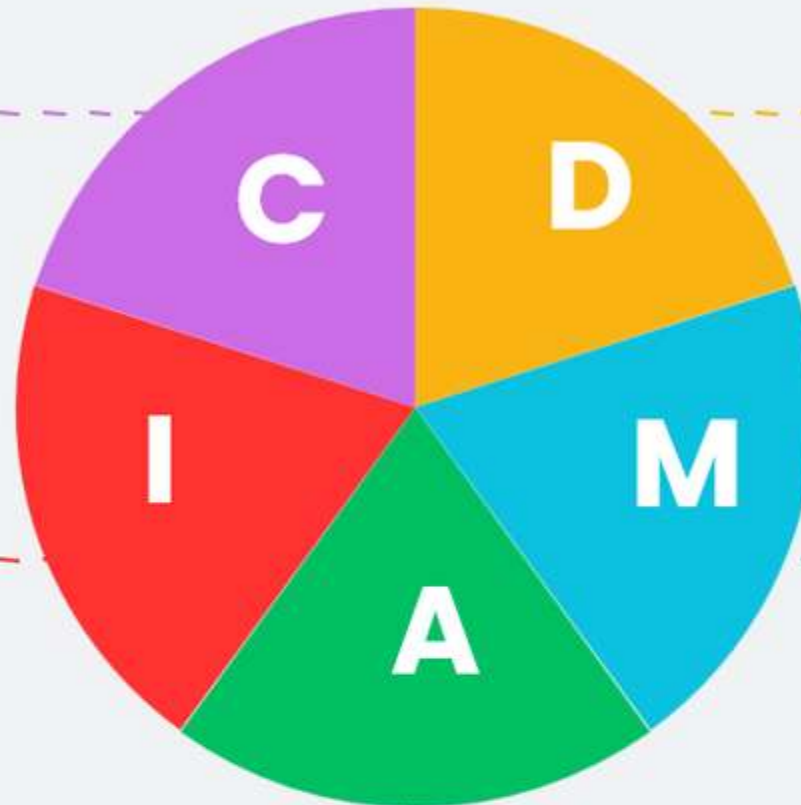
Define and Quantify the
Problem and Objective

Measure Phase Objective

Baseline Process, Validate
Measures, Identify All Possible X's

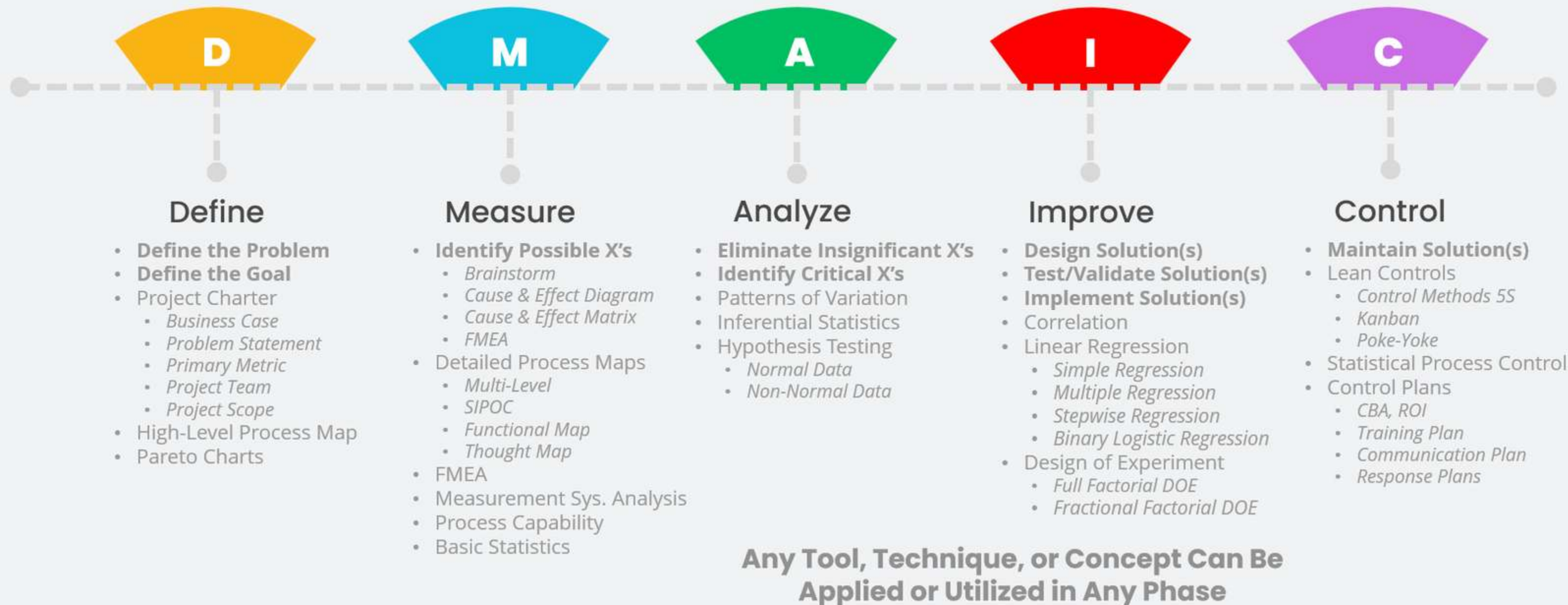
Analyze Phase Objective

Analyze X's, Eliminate



D.M.A.I.C. is a Process Taught from Define Through Control

However, D.M.A.I.C. is NOT Strictly Linear



The Six Sigma Approach...

The Six Sigma Approach to Problem-Solving is $Y=f(x)$

$Y=f(x)$
is a
transfer
function.

It is a Mathematical Expression of the Relationship Between the Inputs and Outputs of a System.

Y

=

f(x)

An Output

is

a Function of its Inputs

An Output Such as Your Primary Metric
or any Other Performance Measure.

Inputs or (X's) Are All The Possible
Variables That Can Influence The Output.

- ✓ It is critical that you understand and embrace this concept.
- ✓ $Y = f(x)$ is the Relational Transfer Function That is Used by All Six Sigma Practitioners.
- ✓ As a Six Sigma Practitioner, Your Job is to Use The DMAIC Methodology, Weed Through All the Noise, and Identify the Critical X's

Six Sigma Roles and Responsibilities

Six Sigma Has A Hierarchy of Certification Levels, Key Roles, and Teaching and Mentoring responsibilities that Combined, Instill a Culture of Continuous Improvement.

Six Sigma Designations

LSS = Lean Six Sigma

SS = Six Sigma

YB = Yellow Belt

GB = Green Belt

BB = Black Belt

MBB = Master Black Belt

- ✓ MBBs and BBs Facilitate Training and Mentor Others.
- ✓ Master Black Belts Advise Champions and Sponsors.
- ✓ Champions and Sponsors Should be Yellow Belt Trained.

Yellow Belt (YB)

The Subject Matter Expert (SME) who understands Six Sigma projects, roles, and even some tools and techniques.



Green Belt (GB)

Following in the path of the Black Belt is the Green Belt who engages in Six Sigma while maintaining their existing role.



Black Belt (BB)

The Black Belt is the marquee player in the Six Sigma arena. Self-starter, skilled, educated, and sometimes even in a dedicated role.



Master Black Belt (MBB)

Master Black Belts have the highest level of certification, leadership experience, and project experience.



Certifications: 5,299



Yellow Belt

Exam Pass Rate
97.9%



Green Belt

Exam Pass Rate
94.2%



Black Belt

Exam Pass Rate
96.3%



Certification Related Average Annual Salaries

Quality and Continuous Improvement positions requesting Six Sigma certification. Sources: Salary.com, LinkedIn, ZipRecruiter. Data as of January 2024. Scale: Dollars, Annual Salary.





LEAN SIGMA
C O R P O R A T I O N

Earn Your Certification
Today and Advance Your
Career Forever!

Get Started