



LEAN SIX SIGMA WHITE BELT

PROFESSIONAL CERTIFICATION



LSSWBPC™ Version 112022

LEAN SIX SIGMA WHITE BELT PROFESSIONAL CERTIFICATION LSSWBPC™



Who is Certiprof®?

Certiprof® is a certifying entity founded in the United States in 2015, currently located in Sunrise, Florida.

Our philosophy is based on the creation of knowledge in community and for this purpose its collaborative network is formed by:

- **Our Lifelong Learners (LLL)** identify themselves as Continuous Learners, demonstrating their unwavering commitment to lifelong learning, which is vitally important in today's ever-changing and ever-expanding digital world. Regardless of whether or not they win the exam.
- Universities, training centers, and facilitators around the world are part of our network of **ATPs (Authorized Training Partners)**.
- **Authors (co-creators)** are industry experts or practitioners who, with their knowledge, develop content for the creation of new certifications that respond to industry needs.
- **Internal Staff:** Our distributed team with operations in India, Brazil, Colombia and the United States is in charge of overcoming obstacles, finding solutions and delivering exceptional results.



Our Affiliations

Memberships



Digital badges issued by



IT Certification Council – ITCC

Certiprof® is an active member of ITCC.

One of the importance of being part of the ITCC is how industry leaders collaborate with each other in an open format to explore new or different ways of doing business that inspire and encourage innovation, establishing and sharing best practices that allow us to extend that knowledge to our community. Certiprof has contribute with white papers in the Career Path Ways Taskforce a taskforce that was implemented internally to offer students with the opportunity to know what path to take after a certification.

- IBM
- CISCO
- ADOBE
- AWS
- SAP
- GOOGLE
- ISACA



Agile Alliance

Certiprof® is a corporate member of the Agile Alliance.

By joining the Agile Alliance corporate program, we continue to empower people by helping them reach their potential through education. Every day, we provide more tools and resources that enable our partners to train professionals who seek to enhance their professional development and skills.

<https://www.agilealliance.org/organizations/certiprof/>



This alliance allows individuals and companies certified or accredited with Certiprof® to have a worldwide distinction through a digital badge.

Credly is the world's largest badge repository, and leading technology companies such as IBM, Microsoft, PMI, Nokia, and Stanford University, among others, issue their badges with Credly.

Companies issuing knowledge validation badges with Credly:

- **IBM**
- **Microsoft**
- **PMI**
- **Universidad de Stanford**
- **Certiprof**



Digital Badges



According to a study by the IT Certification Council (ITCC), people knew little about digital badges years ago. Today, large companies and educational institutions around the world issue badges.

Digital badges contain detailed metadata about who earned them, the competencies required, and the organization that issued them. Some badges are even linked to the activities needed to attain them.

For companies and educational institutions, badges and the information they provide are so important that many decisions, such as hiring or admission decisions, are based on the data they provide.

Digital Badges:
What Are They?



Why are they important?



- **Ease of Sharing and Verifying Achievements:**

Digital badges allow professionals to showcase and verify their achievements instantly and globally. According to a Credly report, **LinkedIn profiles with digital badges receive 40% more attention from recruiters and employers.**

- **Visibility on Digital Platforms:**

In a survey conducted by Pearson and Credly, **85%** of users who earned digital badges shared them on LinkedIn, and **75%** reported that this improved their **professional credibility in their networks.** In addition, **76%** of employers surveyed said that digital badges help them quickly identify specific skills.



Why are they important?

- **Hiring Impact:**

A study by the **International Project Management Association (PMI)** found that candidates who display project management digital badges are **60%** more likely to be hired compared to those who only mention their skills without digital verification.



Why are they important?

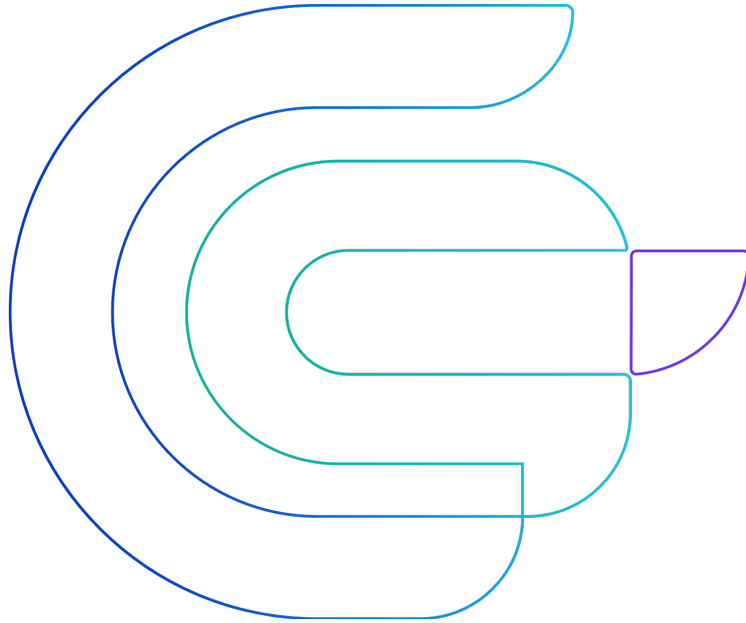


- **Personal Brand Empowerment:**

Digital badges' instant visibility and verification allow professionals to demonstrate their skills and build a solid personal brand. According to a LinkedIn study, professionals who use digital badges **are 24%** more likely to advance in their careers.

Certification and digital badges validate knowledge and are powerful tools for continuous improvement and employability. In a world where lifelong learning has become the norm, these credentials are key to professional development and competitiveness in the global job market.





Not all badges are created equal, and at **certiprof**, we are committed to offering you more than just digital recognition. By earning a badge issued by **certiprof**, you will receive validation of your knowledge backed by one of the world's leading professional certification bodies.

Take the next step and earn the badge that will open doors and position you as an expert in your field.



Why getting your certificate is essential?

- **Proof of Expertise:** Your certificate formally acknowledges the skills and knowledge you've acquired. It serves as verifiable proof of your qualifications and demonstrates your commitment to excellence in your field.
- **Credibility and Recognition:** In today's competitive job market, employers and peers value credentials that distinguish you from others. A certification certificate from a recognized institution, like Certiprof, provides instant credibility and boosts your professional reputation.
- **Career Advancement:** Having your certificate can open doors to new opportunities. Whether it's a promotion, a raise, or landing a new job, certifications are critical differentiators employers look for when evaluating candidates.



Why getting your certificate is essential?

- **Networking Opportunities:** Holding a certificate connects you with a network of certified professionals. Many organizations have alumni or networking groups where you can share experiences, exchange ideas, and grow your professional circle.
- **Personal Achievement:** Earning a certification is a significant accomplishment, and your certificate is a tangible reminder of the hard work, dedication, and progress you've made. It's something you can be proud of and showcase to others.





The badge is circular with a dark blue border. Inside, the text 'PROFESSIONAL CERTIFICATION' is at the top, 'certiprof' is in the center with a stylized 'G' logo, and 'LEAN SIX SIGMA WHITE BELT' is at the bottom. A small 'LSSWBPC™' tag is on the right side.

Lean Six Sigma White Belt Professional Certification - LSSWBPC

Issued by [Certiprof](#)

Lean Six Sigma Professional Certification holders have the skills and abilities to understand the basic statistic concepts related to Six Sigma and its ideas. They also appreciate the DMAIC steps and how to use the essential quality tools in its cycle.

[Learn more](#)

 Certification

 Paid

Skills

Business Analysis

Change Management

Efficiency

Lean Six Sigma Green Belt

Organizational Change

Project Management

Quality Management

Resource Optimization

Six Sigma

Statistics

<https://www.credly.com/org/certiprof/badge/lean-six-sigma-white-belt-professional-certificatio.1>



Lifelong Learning

- Certiprof has created a special badge to recognize consistent learners.
- By 2024, more than 1,000,000 of these badges have been issued in over 11 languages.

Purpose and Philosophy

- This badge is intended for people who firmly believe education can change lives and transform the world.
- The philosophy behind the badge is to promote commitment to lifelong learning throughout life.

Accessing and Earning the Badge

- The Lifelong Learning badge is awarded at no cost to those who identify with this approach to learning.
- Anyone who considers themselves to be a lifelong learner can claim their badge by visiting:

<https://certiprof.com/pages/certiprof-lifelong-learning>



Syllabus

- Lean Manufacturing
- Lean Methodology
- Six Sigma
- Statistics
- DPMO
- DMAIC process
 - Definition
 - Measurement
 - Analysis
 - Improvement
 - Control
- Lean Six Sigma Roles and Belts



General Information

Name

Company, area and position.

What do you mean by Six Sigma?

What experience in Six Sigma do you have?

What expectations do you have of the course?



Course Objectives

1

Knowing Lean Manufacturing and the 7 wastes

2

Knowing basic concepts of statistics

3

Knowing the origin of Six Sigma and its mathematical concept

4

Understanding the basics of the DMAIC cycle

5

Knowing the Six Sigma roles

6

Taking the Certification exam



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SHARE AND VERIFY YOUR LEARNING ACHIEVEMENTS EASILY

#LSSWBPC #certiprof



 certiprof®

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Lean Manufacturing

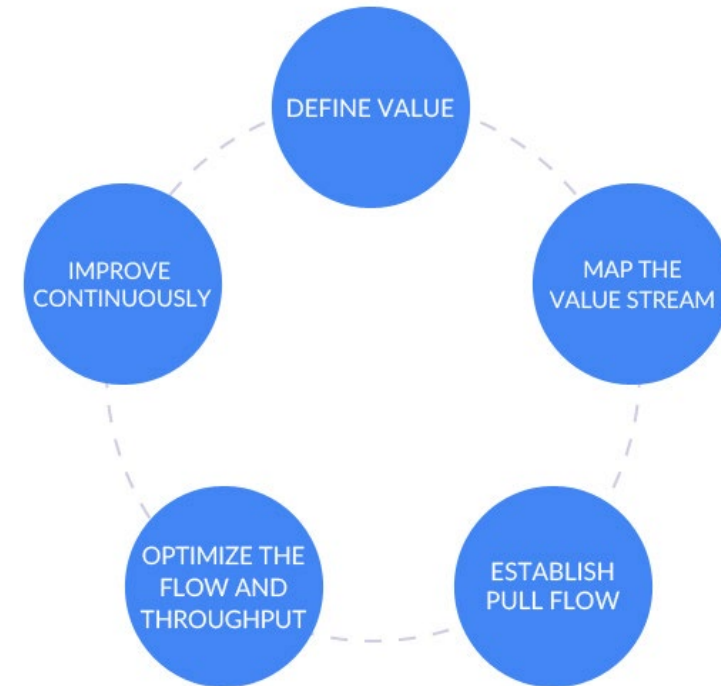


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LEAN Methodology

The Lean methodology is created by engineer Taiichi Ohno in the twentieth century for Toyota and its basis is customer satisfaction through on-time deliveries and minimum use of resources, prioritizing continuous improvement as a basic concept.



García Ortega, B (undated) Principios fundamentales de la metodología Lean, Escuela Técnica Superior de Ingeniería Industrial Universitat Politècnica de València, Figure 1



LEAN Methodology



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Six Sigma



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Six Sigma

What is it?

Six Sigma is a data-driven, customer-focused, results-oriented methodology that uses statistical tools and techniques to systematically eliminate defects and inefficiencies to improve processes.



Six Sigma

""We are going to change the paradigm from correcting products to correcting and developing processes, so that they produce nothing but perfection or something very close to it."

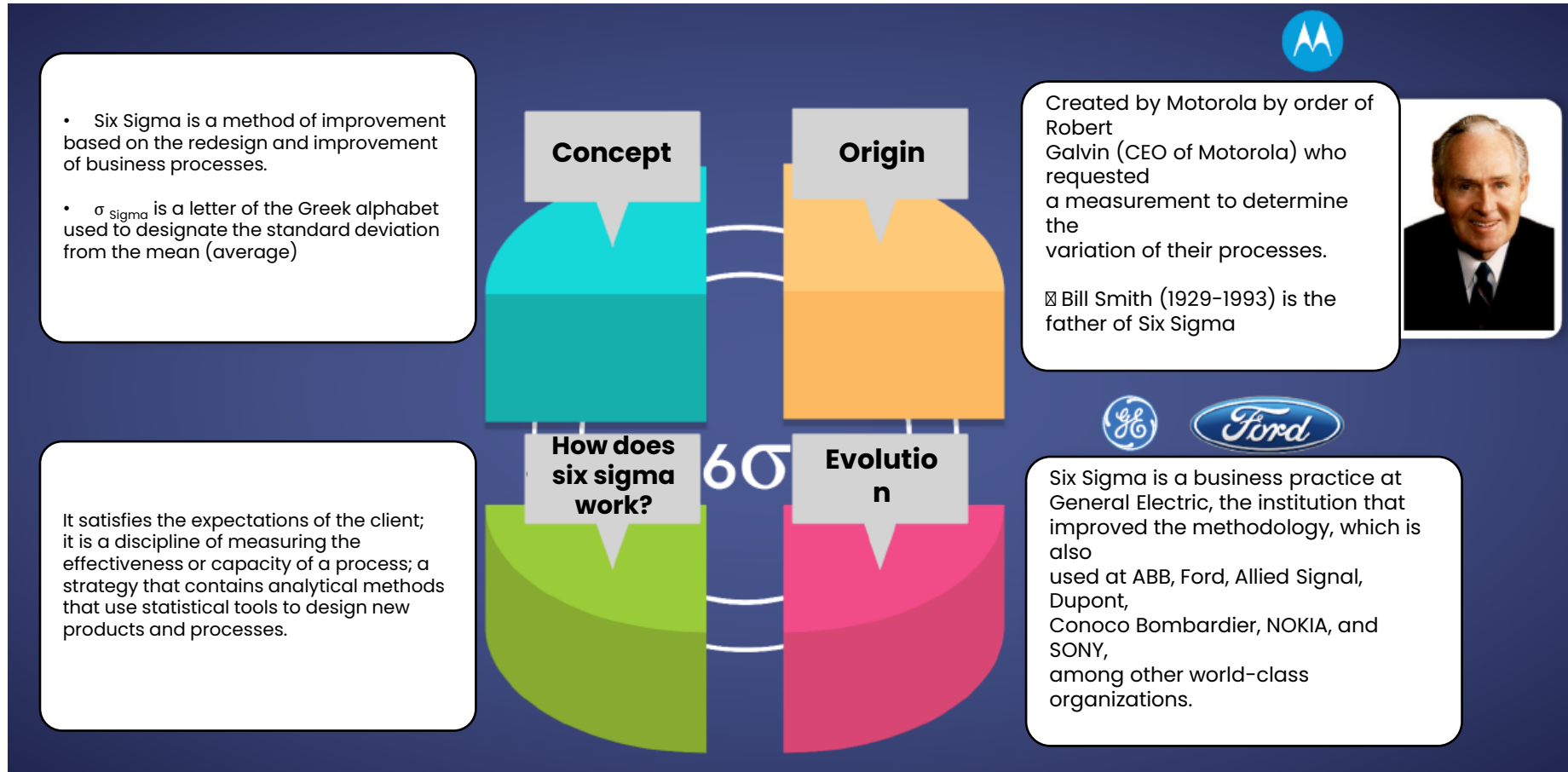
Jack Welch 1995

\$2.5

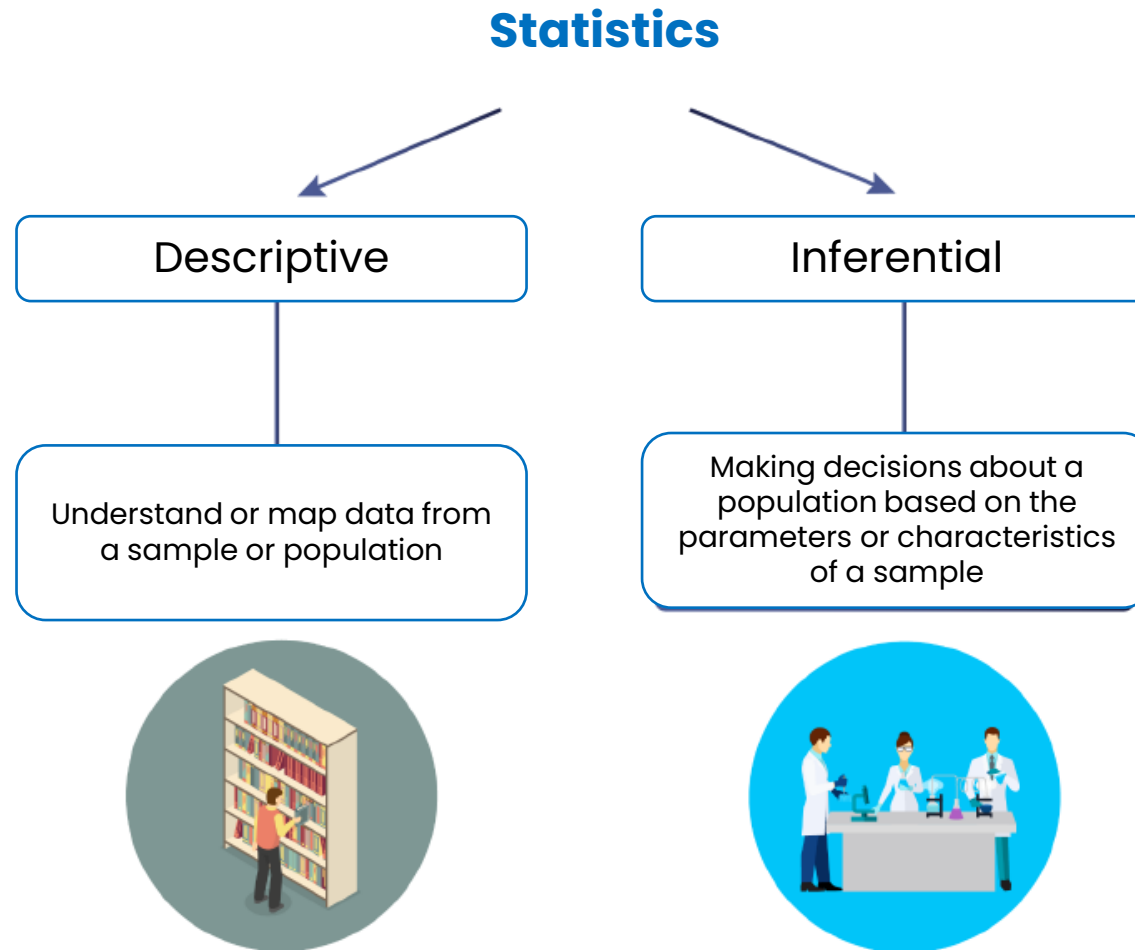
billion/year in savings



Six Sigma



Statistics



Data Types

Different types of data require different types of analysis. Because of this we need to identify what kind of data we are handling.

Discrete Data: The data is discrete (Counted). They result from the use of pass/fail gages, or from the inspection of visual defects, visual problems, missing parts or pass/fail or yes/no decisions.

Continuous Data: The data is continuous (measured). They result from the actual measurement of such a characteristic as the impedance of a motor's winding, zero tension force, diameter of a tube, flow of a pump, time, money, etc.



Basic Statistics

Discrete Data (Count Data).

#1 Number of parts in a category (Count-based proportions).

- Eagle/Seal (Count number of eagles and seals).
- Yes/No (Form to order filled exactly or not).
- Pass/Fail; Good/Bad (Exact Charge/Exaggerated Charge).

#2 Number of times of a discrete event.

- Number of scrapes on the hood of a car.
- Number of errors in a form.
- Number of insulation breaks in a roll of wire.
- Number of times a customer hangs up without receiving a response.

Continuous data (Continuous measurement scale).

#1 Datos continuos.

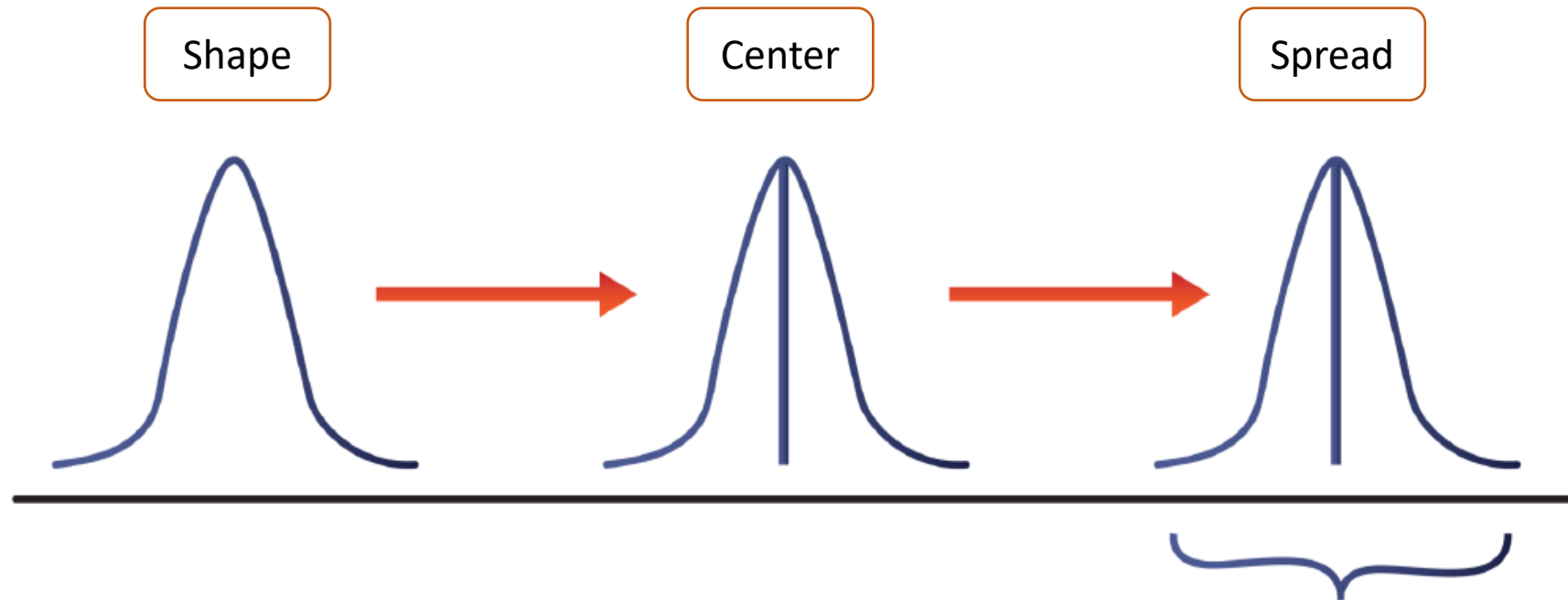
- Decimal subdivisions are significant.
- Example: Time to answer the phone (# exact seconds per call).



What interests us about data?

We are interested in describing a group of data in terms of 3 elements:

Why will we be interested in these elements?



Measures of Central Tendency

Mean

Arithmetic average of a group of values.

Media

Displays the value that represents 50% of the range the central number of a group of numbers when sorting them from highest to lowest.

Mode

The value that occurs most frequently in a data group. On a Pareto chart, it's the largest bar.

$$\mu = \frac{\sum_{i=1}^n X_i}{n}$$



Measures of Dispersion

- **Range:** The distance between the extreme values of a data group (greater minus the smallest). Range is more sensitive to extreme data than other dispersion measures.

$$R = \text{Max } (X_i : X_n) - \text{Min } (X_i : X_n)$$

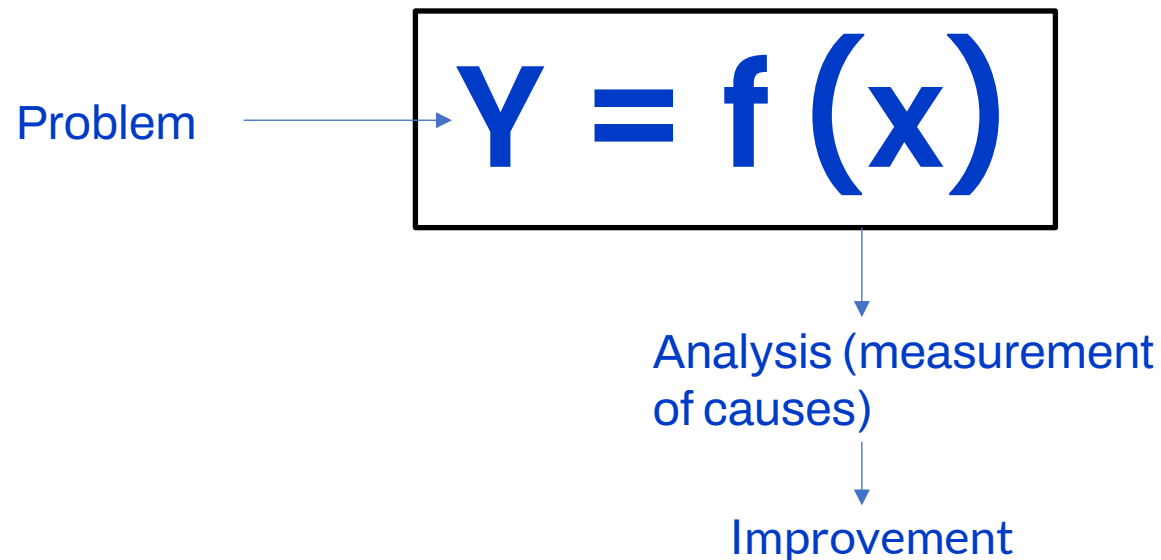
- **Variance (σ^2):** The square difference of each value from the mean.
- **Standard deviation (σ):** Square root of the variance.

$$\sigma^2 = \frac{\sum_{i=1}^n (X_i - \mu)^2}{n}$$



Six Sigma

One of the main features of Six Sigma is to find the root cause of the problem that is represented by the following formula.



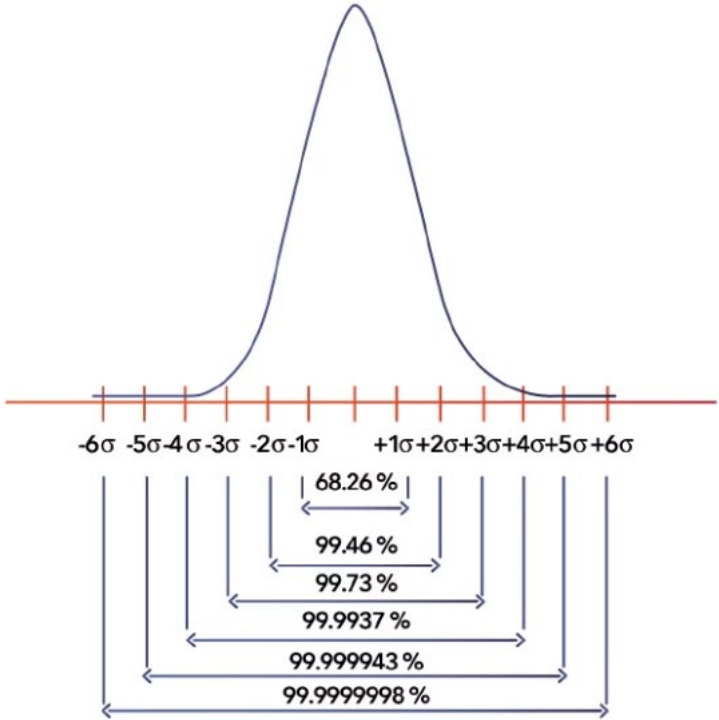
- Y.
- Dependent.
- Output.
- Effect.
- Symptom.
- Monitor.
- X1...XN.
- Independent.
- Input – Process.
- Cause.
- Problem.
- Control.



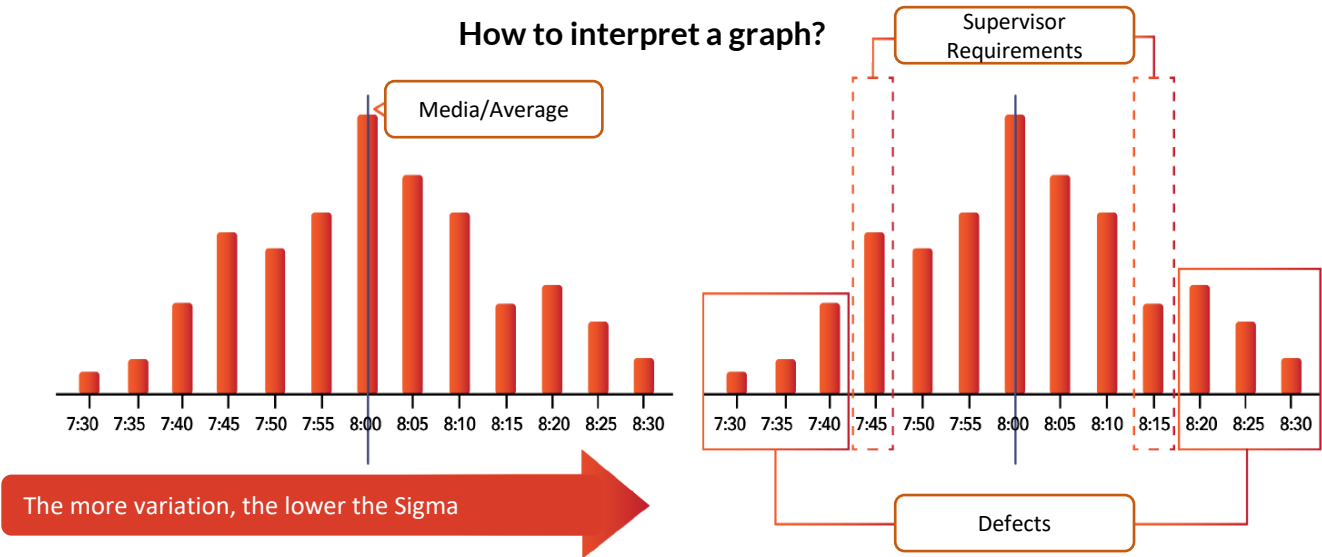
Six Sigma

Mathematical Concept

Six sigma represents six standard deviations from the average value.



Process capability = $\pm 6\sigma$



DPMO

Defects per million opportunities (DPMO) is the number of defects in a sample divided by the total number of defect opportunities multiplied by 1 million.

The DPMO standardizes the number of defects at the opportunity level and is useful because it allows comparing processes with different complexities.

Table of sigma level and DPMO, where the higher the sigma level, the lower the number of DPMOs.

Sigma Level	DPMO	Performance
6	3.40	99.9997 %
5	233.00	99.98 %
4	6.210,00	99.3 %
3	66.807,00	93.3 %
2	308.537,00	69.15 %
1	690.000,00	30.85 %
0	933.200,00	6.68 %



DMAIC

DMAIC works to improve problem solving.

Because this approach is data-driven, it is easier to identify the right targets and root causes; Being a cyclical methodology, it ensures that the changes that obtain the best results are applied as you move forward.

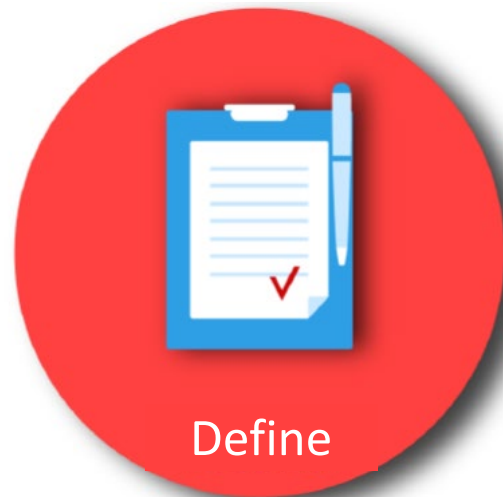


DMAIC

DEFINE

At this stage we define what is the problem we want to solve. This is something fundamental, because without it we can not move on to the second step in which we establish the metrics that we must follow to check the evolution of the problem.

The definition of the same is essential to establish correct KIPs that allow us to have a better knowledge of the situation.



DMAIC

MEASURE

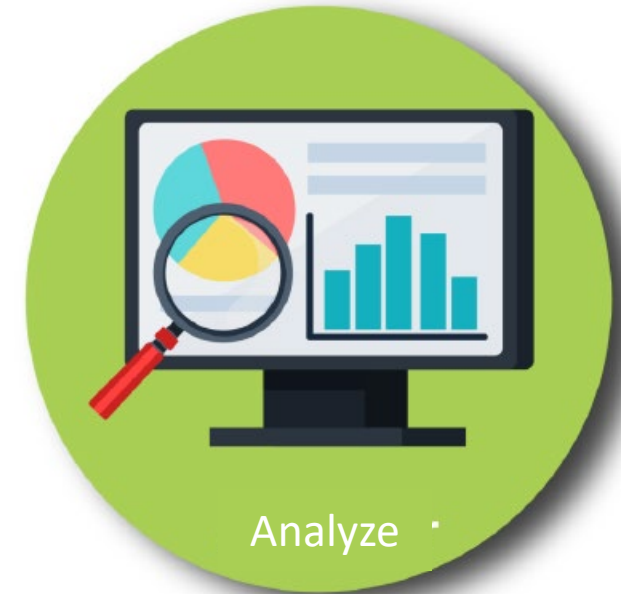
The metrics are collected that help us to know the situation in which the problem we want to solve is, we must measure these parameters and establish a follow-up that allows us later to analyze the situation.



DMAIC

ANALYZE

The collected data must be analyzed, to identify the reasons (root cause) why something is failing and what actions must be carried out in order to correct the problem and improve the KPIs that have been marked.



DMAIC

IMPROVE

After analyzing the data, actions are taken to improve the current situation.



DMAIC

CONTROL

After carrying out these improvement actions, control must be kept over them, to ensure that they are implemented correctly and that the objectives are effectively met.



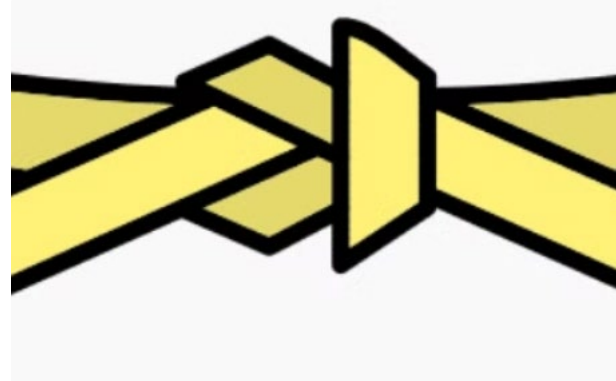
Six Sigma

Feature Overview



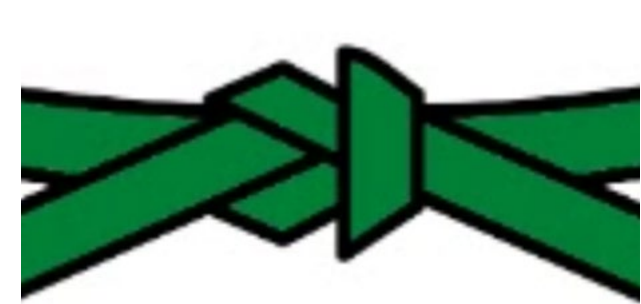
White Belt

- Learn about the concept of Lean Manufacturing and Six Sigma
- Learn about the objectives and advantages of using the Lean Six Sigma methodology
- Learn the basics of Lean Six Sigma



Yellow Belt

- They help Green Belts in specific improvement processes and projects.
- Know and apply basic quality tools



Green Belt

- Can lead a continuous improvement project and process.
- They work under the guidance of the Black Belts.
- Identify root cause, analyze and improve.
- Identify opportunities for improvement in the business.
- Apply the methodology to improve their work.



Six Sigma



Black belt

- Leads and manages a continuous improvement team
- Manage continuous improvement projects full-time
- Train and train the green belts



Master Black Belt

- They are references of good ideas and practices during the projects
- They usually have years of experience
- Six Sigma Process MentorValidates the application of the methodology
- Responsible for the program within the company



Champion

- The Champion is the executive or manager who sponsors the projects.
- You can add resources to your project.
- Organizes, directs the initiation, development, and implementation of Six Sigma across the organization.



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