



Department of Statistics, Sardar Patel University  
and Stat Modeller  
present



# Six Sigma – A Training for Quality Excellence of an Industrial Process

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BY HIREN KAKKAD | CEO & CO-FOUNDER

STAT MODELLER – ROBUST KIT OF SOLUTIONS

**Team**

**Snaps**

**Clients**

**Services**

**History**

**About**



**WELCOME TO**  
**STAT MODELLER**  
**ROBUST KIT OF SOLUTION**

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## MESSAGE FROM

HIREN KAKKAD

CEO & CO-FOUNDER

Data analysis is an immense part of any problem solving or research. In industry as well as in research, data plays a vital role. Data is collected in a large quantity.

But, the challenges are which techniques to be used and how?

To overcome these challenges, Stat Modeller provides the solutions.



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## SHORT PROFILE



- CEO & Co-founder of Stat Modeller
- More than 10 years of industrial experience
- Awardee of the Training Quality Excellence Award by IQAC and ISTD
- Certified Trainer by NSDC & Skill India
- Certified by Google Analytics Academy for Data Studio
- Certified Lean Six Sigma Black Belt
- Trained 9000+ participants
- Guided 100+ Improvement projects
- Assisted 45+ Research Projects
- Trainer for in Data Analysis, R, Python, SPSS, Minitab, Power BI, Excel, Advanced Excel, Six Sigma, TPM, Kaizen, 5-S, Kanban etc.
- Life member of ISTD (Indian Society for Training and Development)



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## HISTORY

Stat Modeller is formed in 2019 providing services related to training and consultancy for Operational Excellence, Application of Statistical Tools and Data Science Tools to solve the problems of various segments.



History

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# TRAINING AND CONSULTANCY

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## Data Science

Machine Learning  
R & R Studio  
Python  
SPSS  
SAS  
Minitab  
Power BI  
Tableau  
Basic Excel &  
Advanced Excel



## Operational Excellence

**Blended Approach**  
Six Sigma  
Lean  
5-S  
TPM  
Kaizen  
Kanban  
QMS  
SPC and SQC



## Research Projects

Research Projects  
Survey Analysis  
Marketing  
Research etc.



## Universities & Colleges

Workshops  
Trainings  
Certification  
Courses for  
Faculties and  
Students



Services



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**Agro Economics**

**Dairy Economics**

**Home Science**

**Mechanical  
Engineering**

**Pharmaceutical  
Sciences**

**Financial  
Management**



**Clients**

**Management  
Studies**

**Marketing  
Management**

**Process Industry**

**Ceramic Industry**

**Plastic Process  
Industry**

**Chemical  
Industry**



**Clients**

**Services**

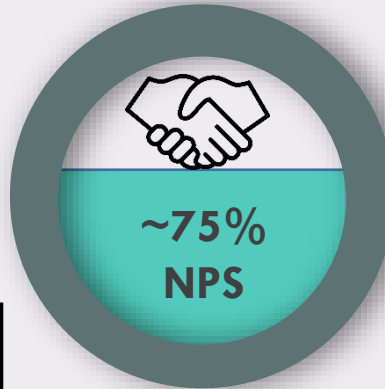
**History**

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adani | Electricity



Services

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# Training on R at UPL



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# PROGRAMS WE DELIVERED



**“Basics of SPSS” at BVM Engineering College**



**“Base SAS” at Dept. of Statistics, Sardar Patel University**



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**“Basics of Python”, Dept. of Statistics, Sardar Patel University**



**“Role of SPSS” at DDU Nadiad**

# PROGRAMS WE DELIVERED



**“Training on R” at  
Mumbai University**



**“Training on R” at  
AERC, Sardar Patel University**



**“Training on R” at Anand Agriculture  
University, Vallabh Vidyanagar**



**“Training on R” at  
HRDC, Gujarat University**



**Snaps**

**Clients**

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**HIREN KAKKAD**

CEO & CO-FOUNDER

Expert in Data Science, Business  
Transformation and Research  
Project Analysis



**MEHUL GANDHI**

BUSINESS ASSOCIATE

Expert in Business  
Transformation and Excel



**KAPIL VALAND**

BUSINESS ASSOCIATE

Expert in Data Science,  
Business Transformation and  
Research Project Analysis

**London, UK**



## Let's get connected



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[www.statmodeller.com](http://www.statmodeller.com)

## Follow us



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Let's begin the session



One of my colleagues shared...

- ❑ One image of the article published on some business newspaper.

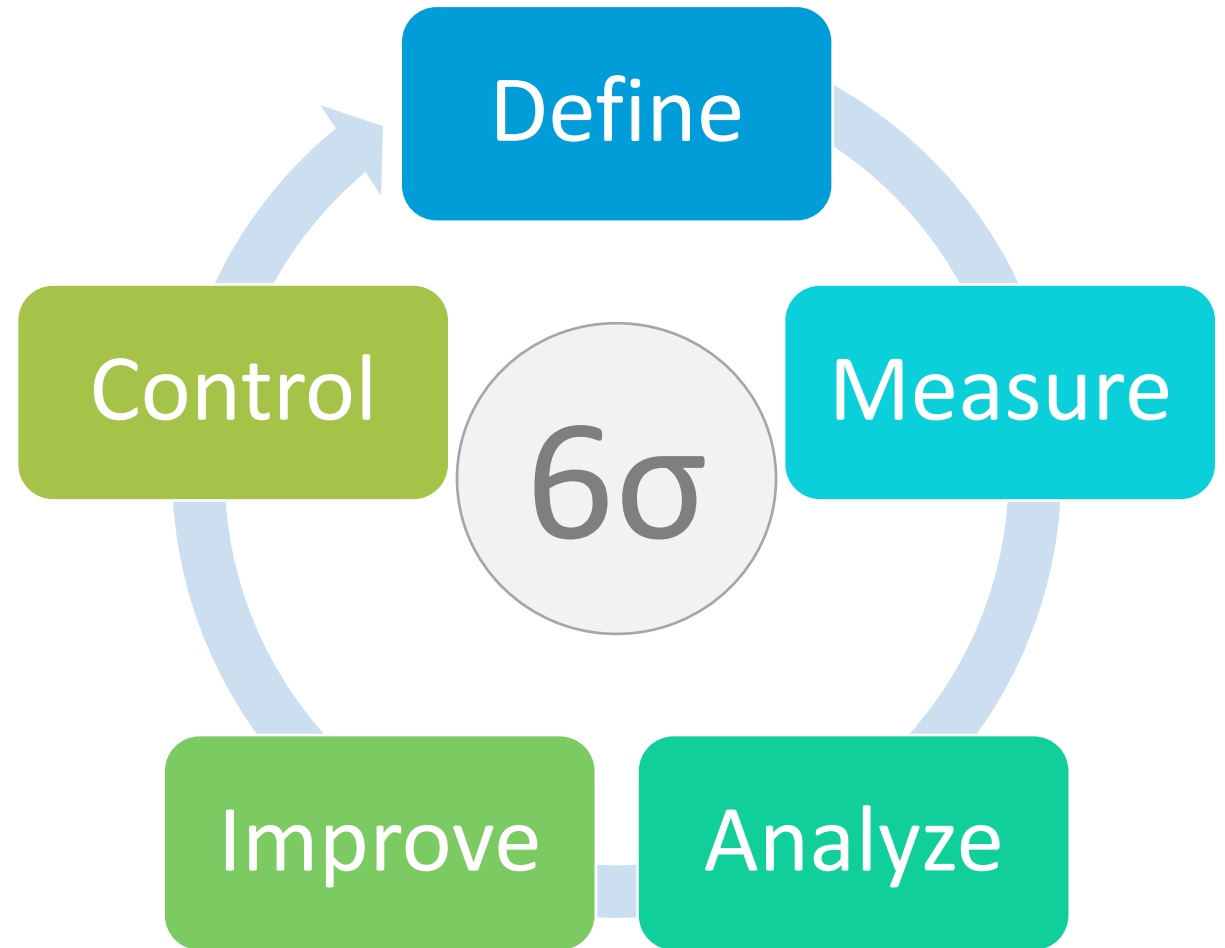


# Session Outline

- What is Six Sigma
- Phases of Six Sigma
- Industries and functions where Six Sigma can be Applicable
- 8 myths about Six Sigma
- Some Facts and Figures
- Pay Scale and Opportunities
- Start-up guide
- Six Sigma Belt Structure
- Certification Procedure
- Case Study of Six Sigma Implementation
- Conclusion Remarks



# What is Six Sigma



# What is Six Sigma

Discipline  
Approach

5 Robust  
Steps  
DMAIC

Wide  
Application

Customer-  
Focused

Data-Driven

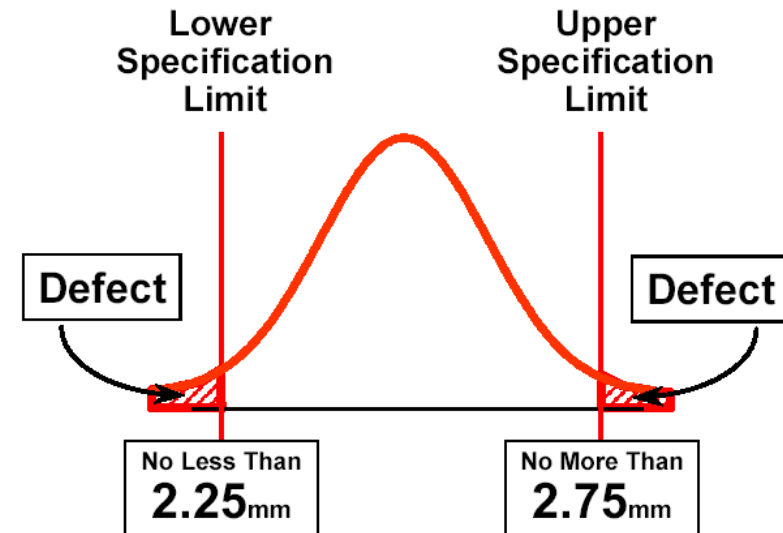
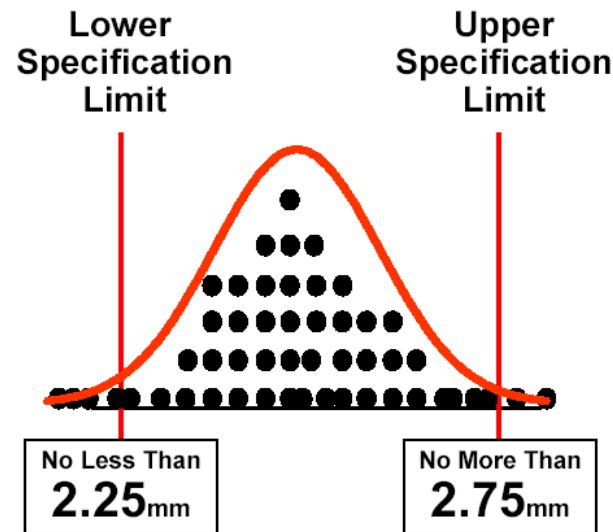
Universal  
Language

# Example of Six Sigma



Client Requirement =  $2.5\text{mm} \pm 0.25\text{ mm}$

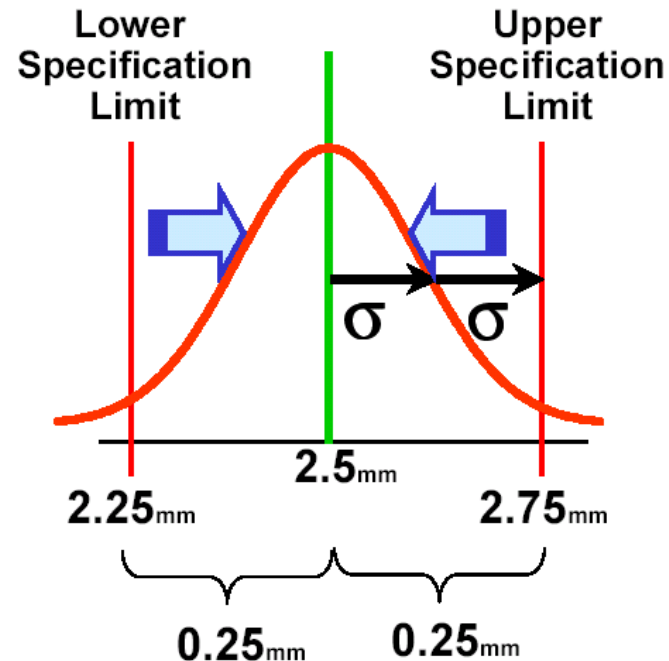
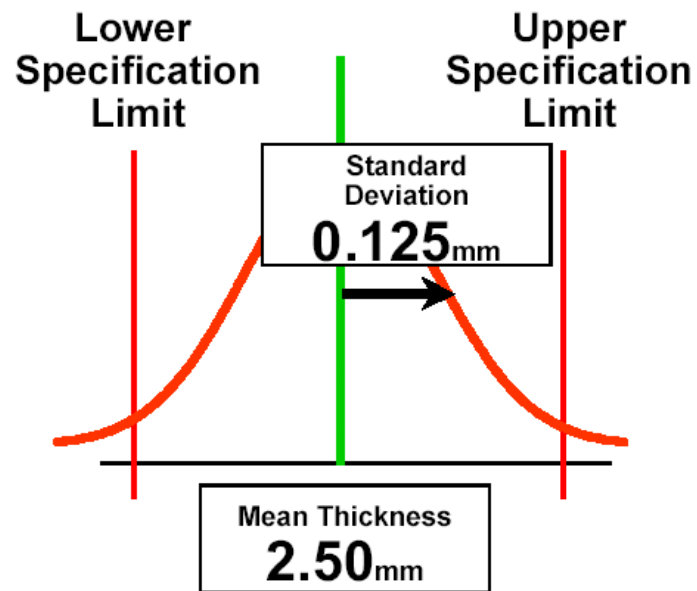
You collected actual data and plot in the graph as shown below



# Example of Six Sigma

Mean diameter = 2.50 mm

Standard Deviation = 0.125 mm



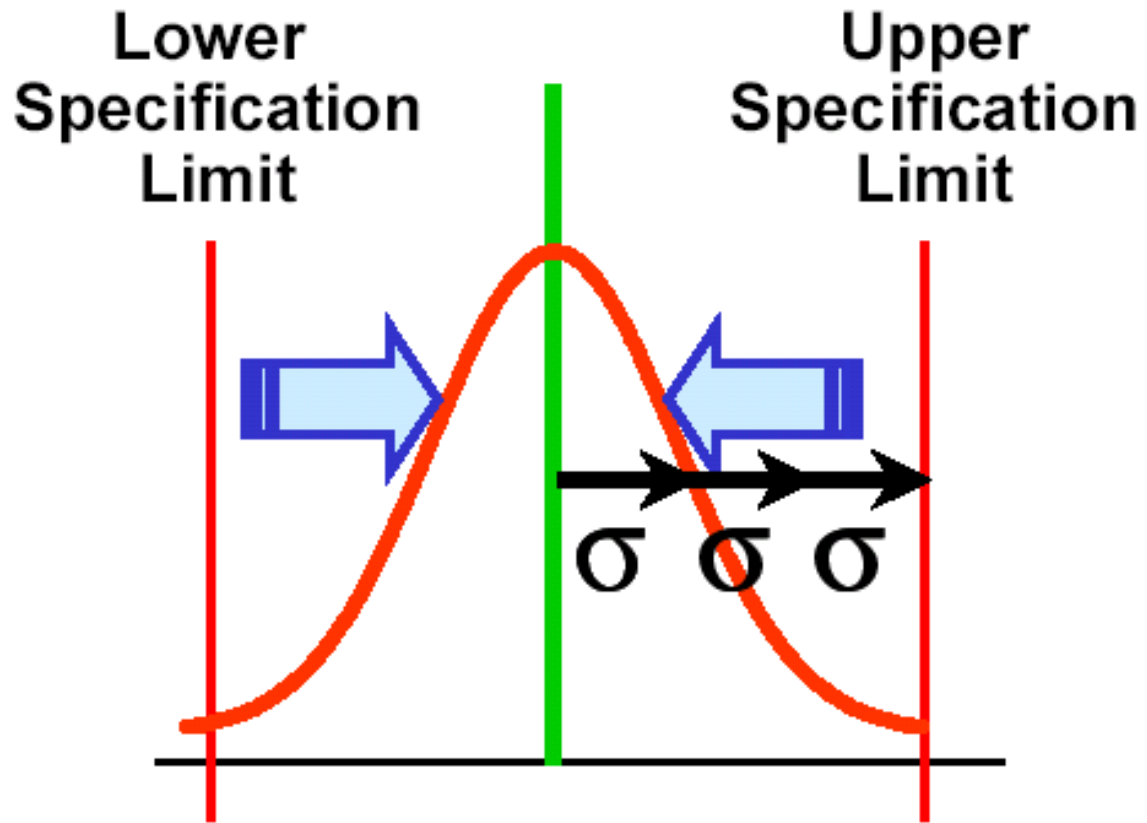
*Process can be improved by reducing the variation*

Spec Width  
**0.5 mm**

Std Dev  
**0.125 mm**

$2\sigma$

# Example of Six Sigma



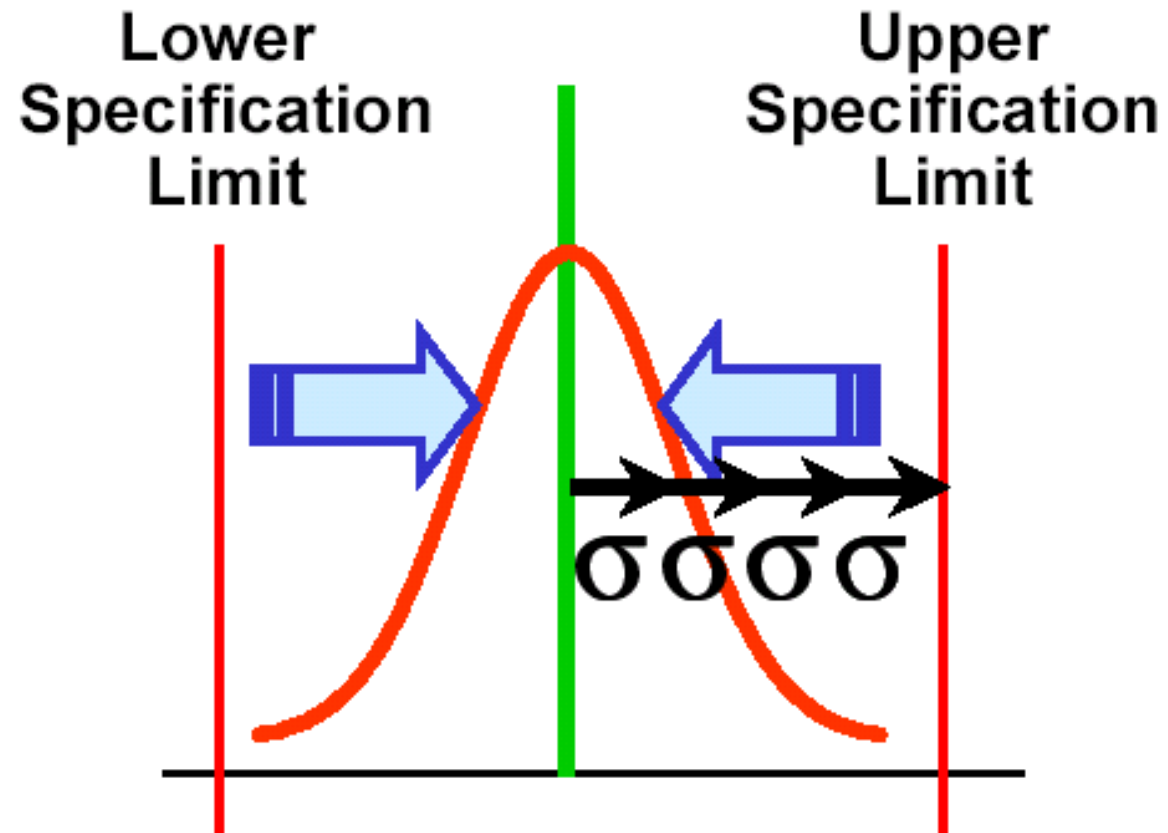
*Process can be improved by reducing the variation*

Spec Width  
**0.5 mm**

Std Dev  
**0.083 mm**

$3\sigma$

# Example of Six Sigma



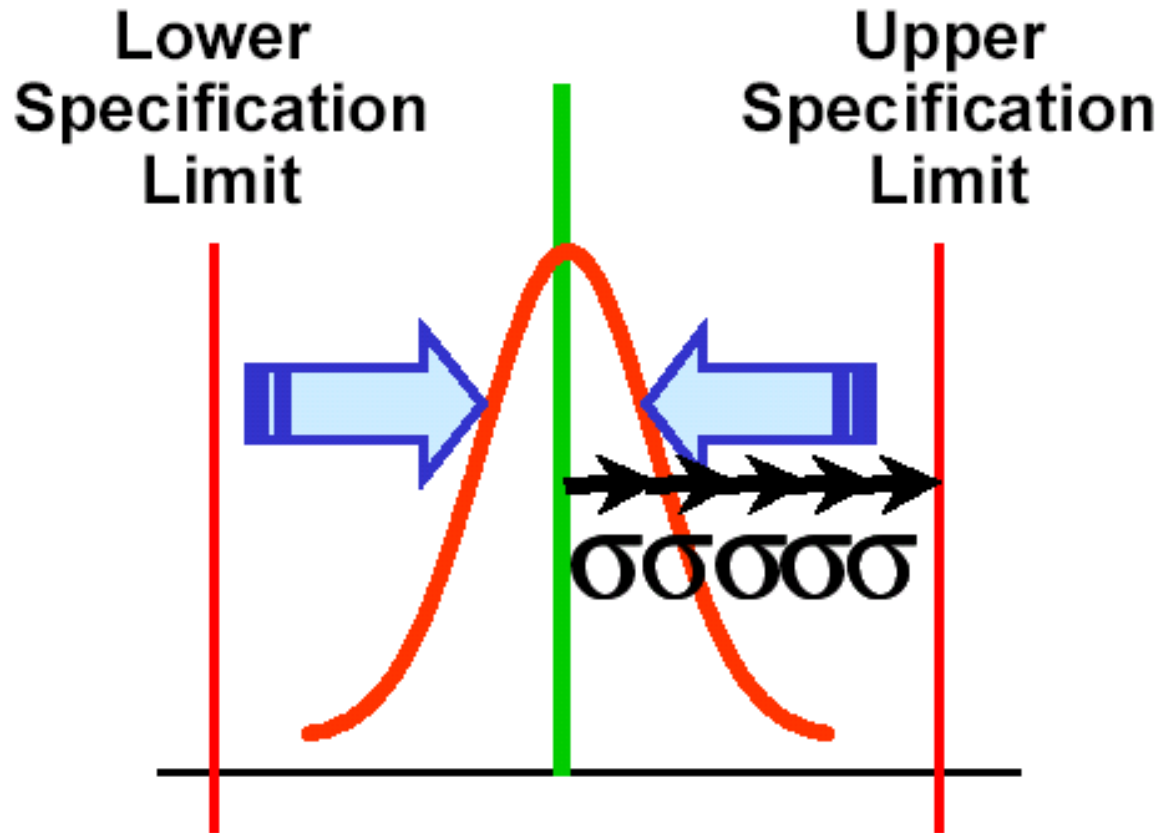
*Process can be improved by reducing the variation*

Spec Width  
**0.5 mm**

Std Dev  
**0.062 mm**

**$4\sigma$**

# Example of Six Sigma



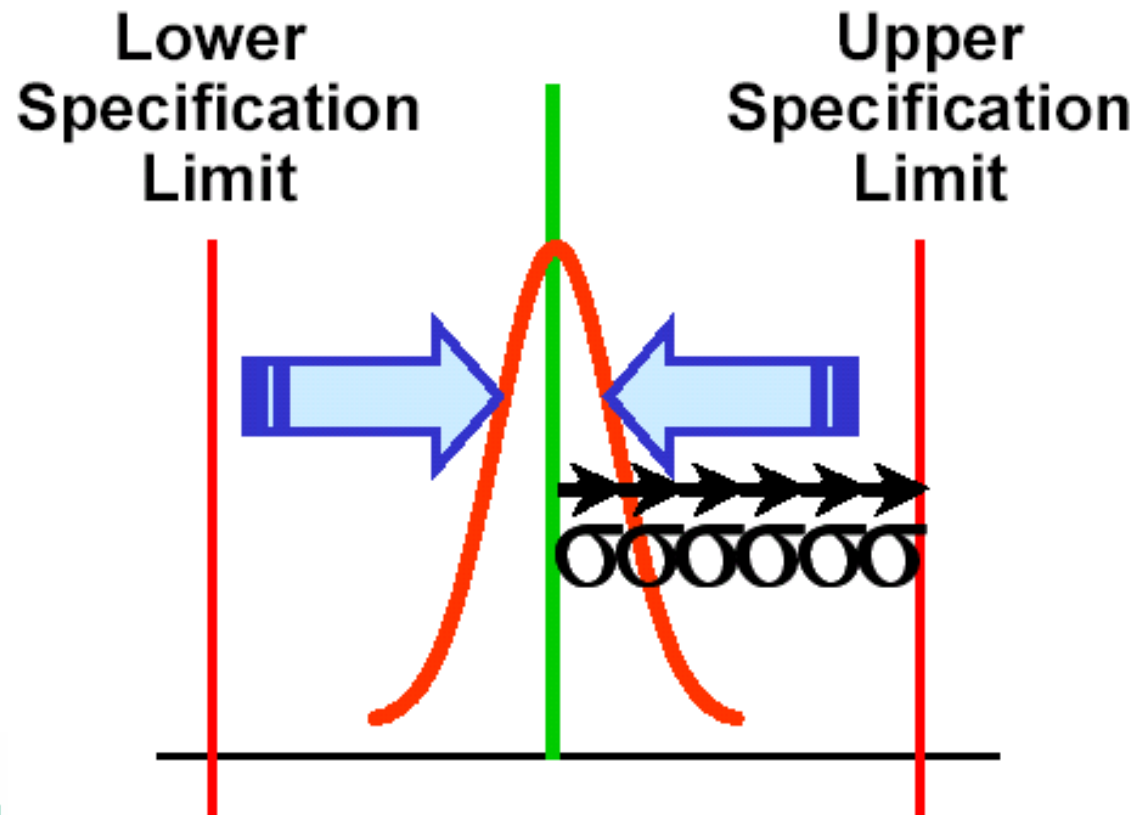
*Process can be improved by reducing the variation*

Spec Width  
**0.5 mm**

Std Dev  
**0.05 mm**

**$5\sigma$**

# Example of Six Sigma



*Process can be improved by reducing the variation*

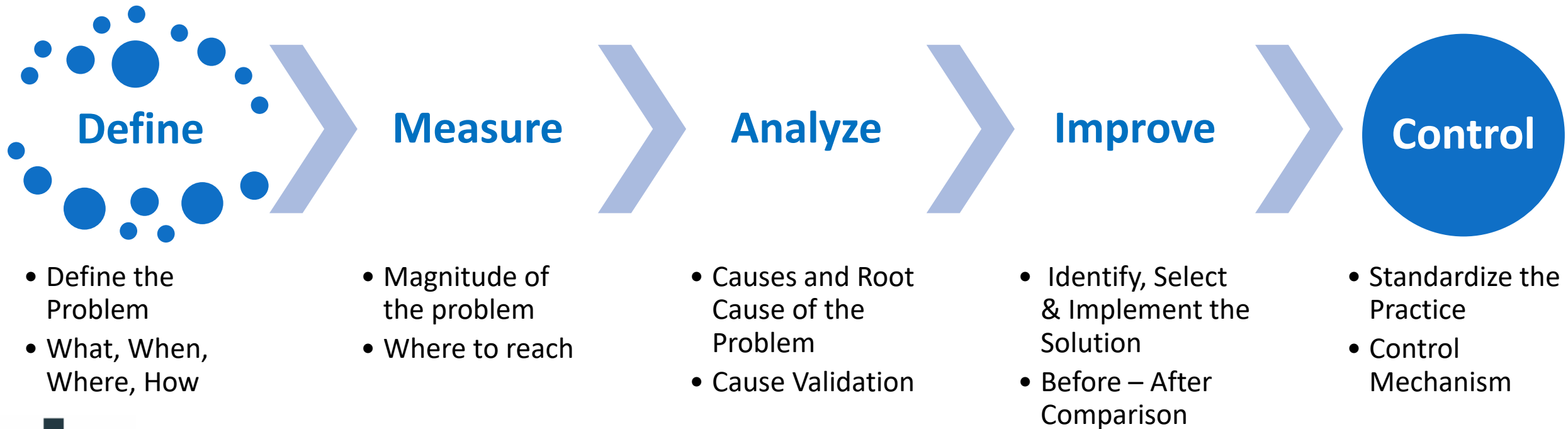
Spec Width  
**0.5 mm**

Std Dev  
**0.041 mm**

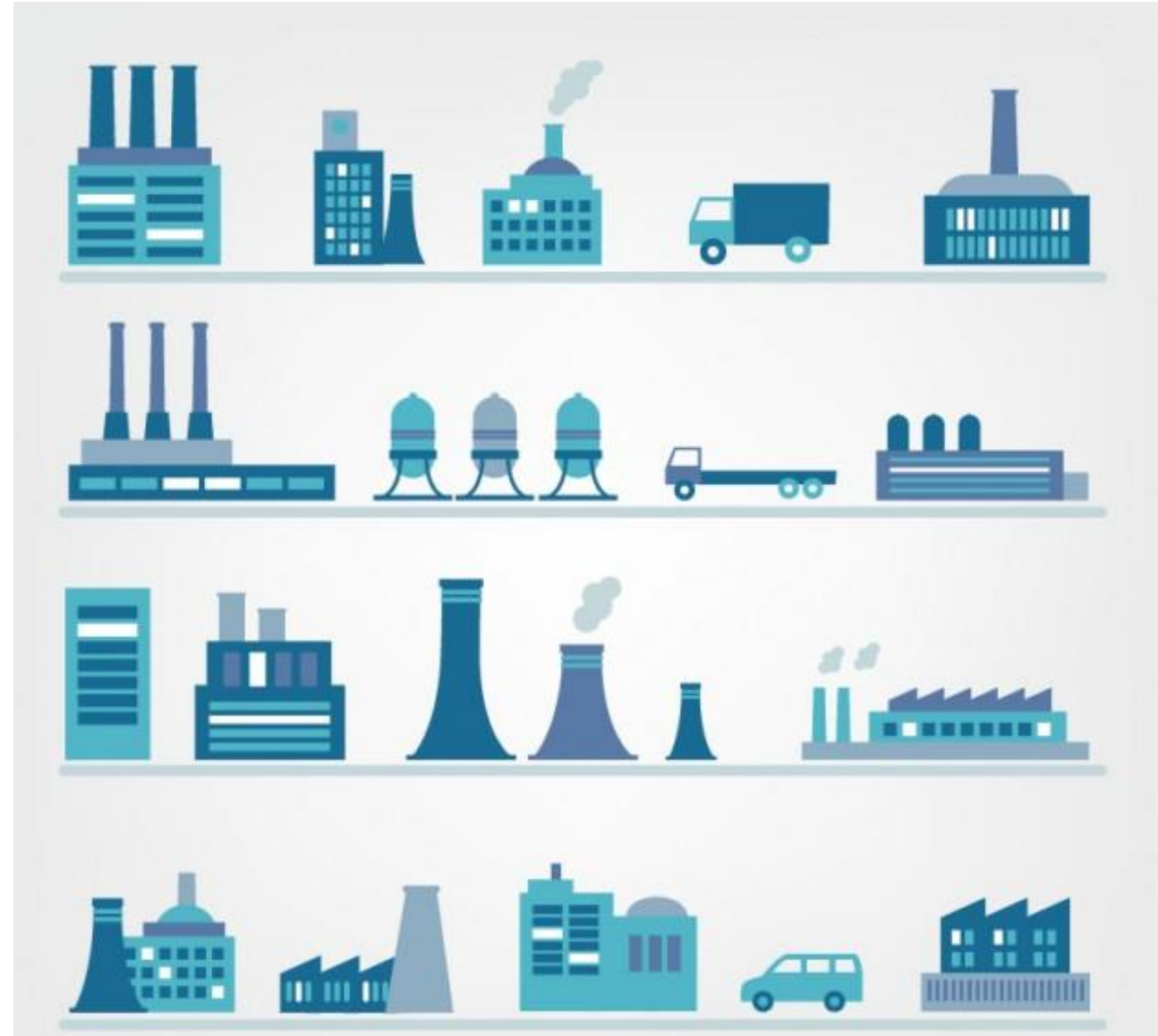
**6 $\sigma$**



# Phases of Six Sigma



# Applicability of Six Sigma



# Industries where Six Sigma Applicable



Engineering Industries



Process Industries



IT Industries



Financial Services



Banking Sector



Pharmaceutical/  
Health care industries



Automotive industries



Chemical Industries

# Functions where Six Sigma Applicable



Quality



Production



HR



Finance



Supply Chain



Customer Service



Design

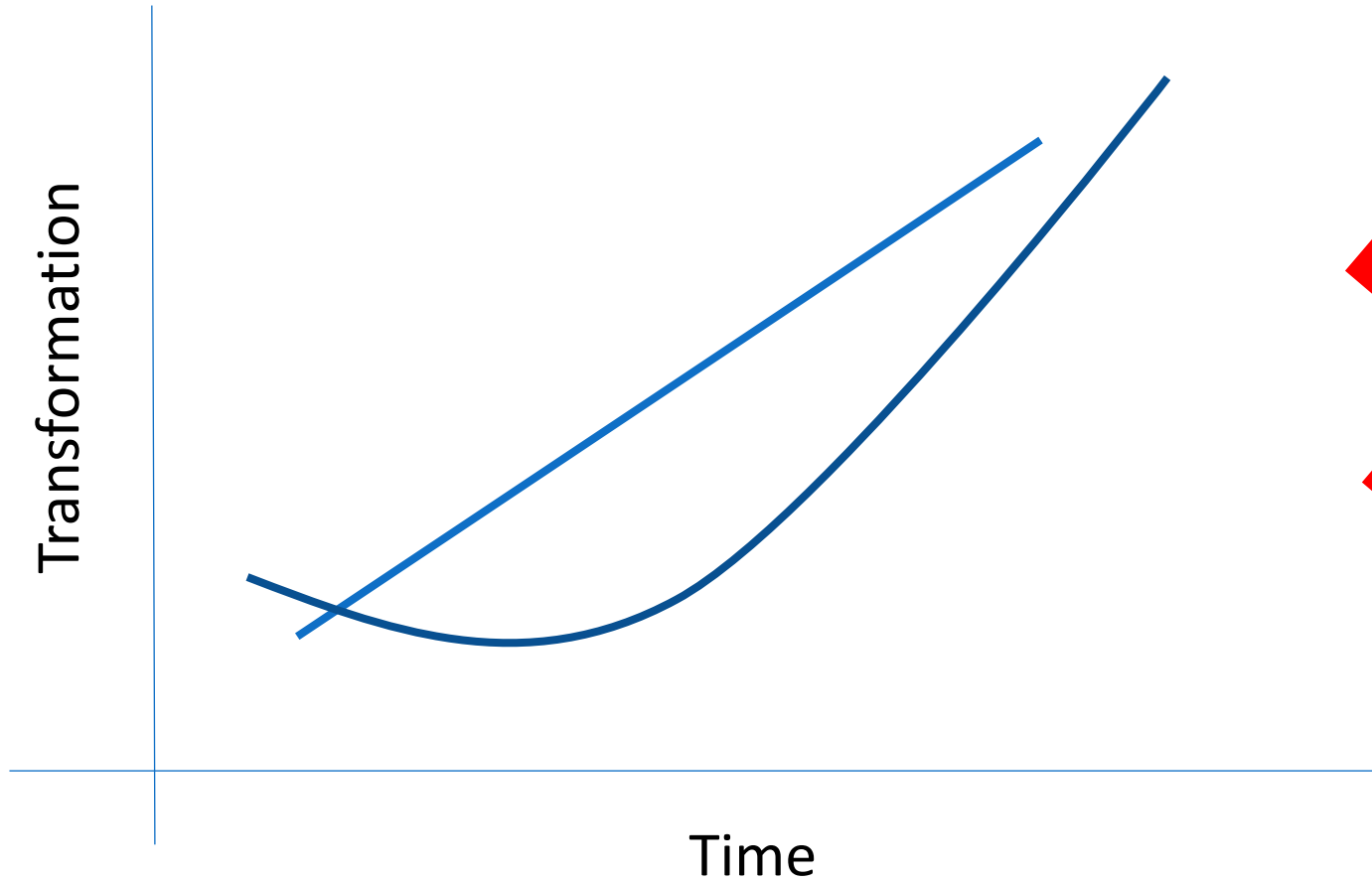
# Transformation Curve



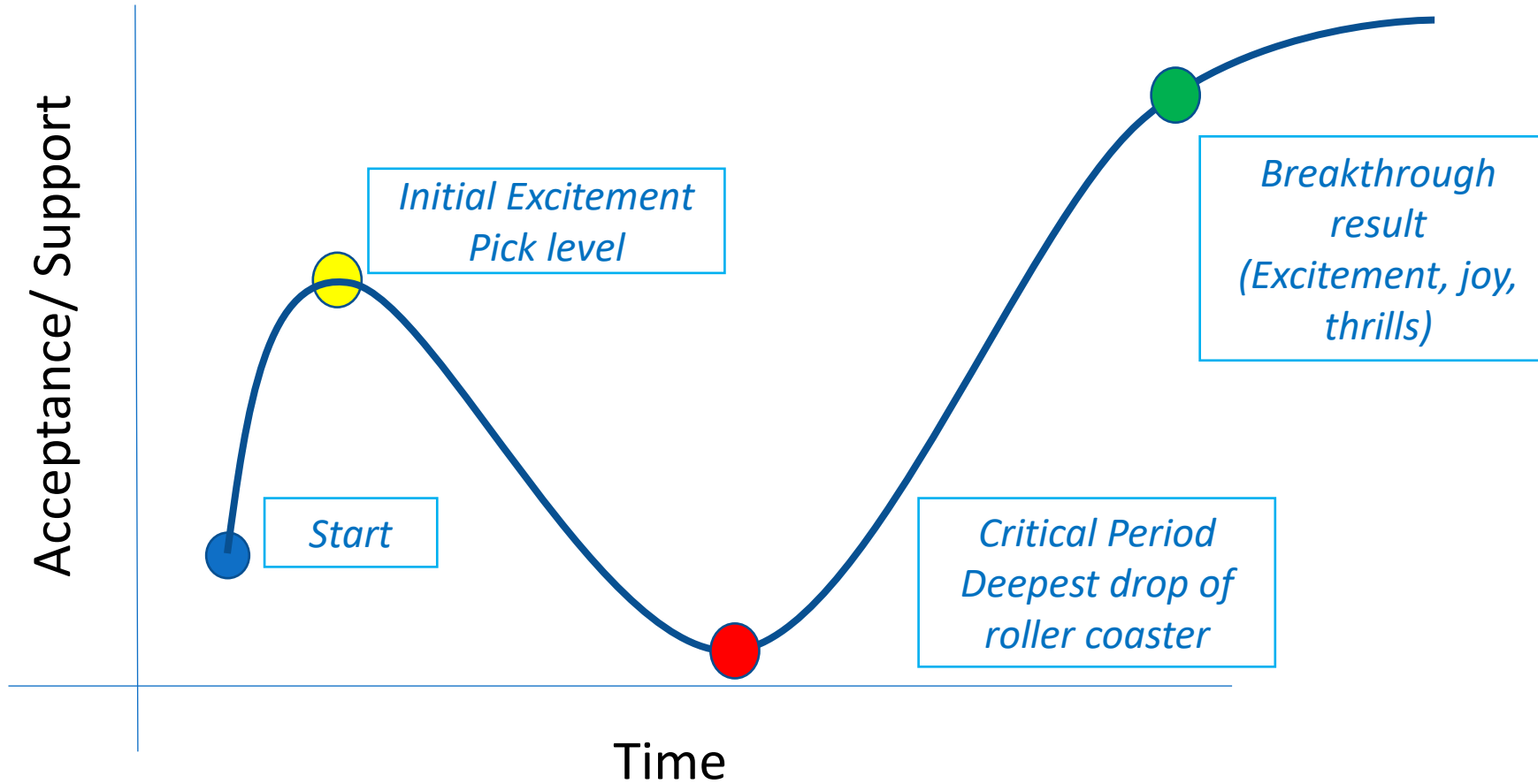
## Why I like Roller Coaster?

- ❑ Its ride make me frightened, scared, sick but gave me excitement, joy and thrills together !!!

# Many people think about Transformation



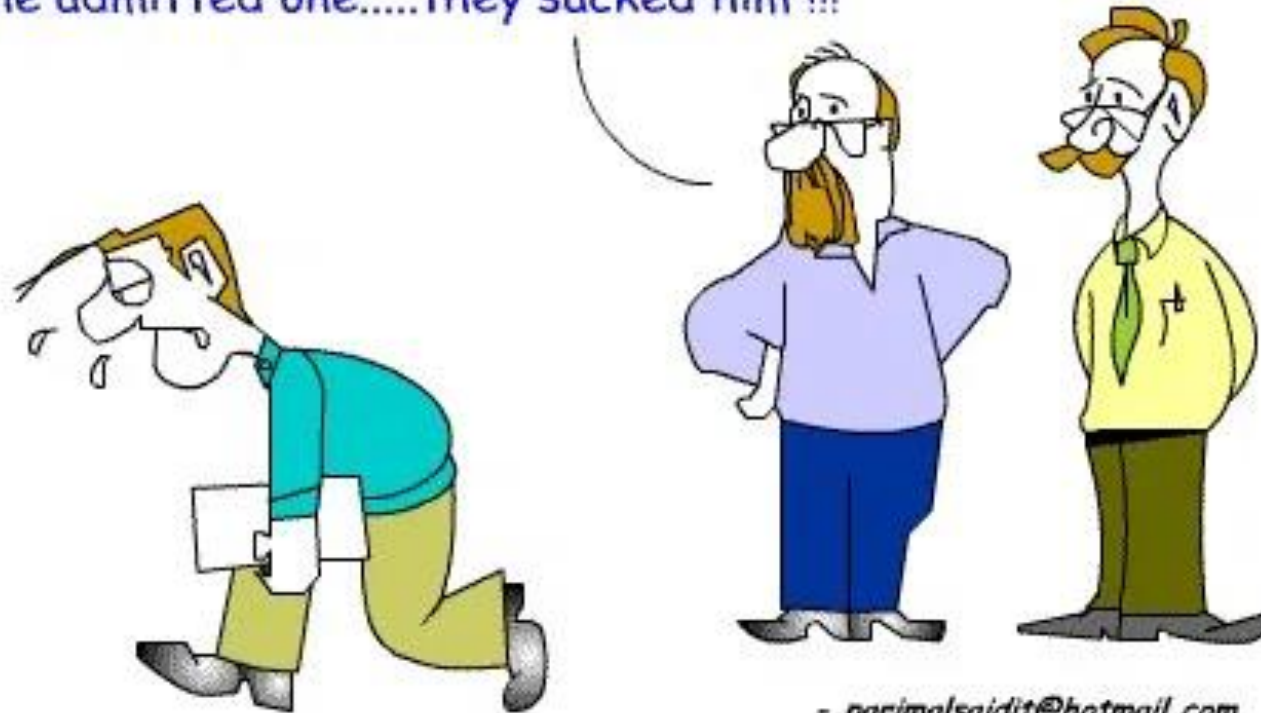
# Transformation Curve





It's not about the **TOOL OR CONCEPT**, Its about the **CULTURE - WAY OF LIFE**

Poor young chap.....he attended a seminar organised by Management.... *"admit mistake and earn respect"*.... he admitted one.....they sacked him !!!



- parimalsaidit@hotmail.com

# Myths about Six Sigma



# 8 Myths about Six Sigma

- Six Sigma is only for automobile company
- Six Sigma is only for Big companies, we are very small
- Our business process is different
- Six Sigma is just a number game
- Six Sigma doesn't focus on customer. And customer is God.
- Six Sigma is all about statistics only
- Six Sigma is not practical, just theory
- Six Sigma doesn't have Financial impact



# Survey Conducted by Minitab



# Demographics: Six Sigma Practitioners

**N = 180**

**Green Belt**  
**24%**

**Black Belt**  
**51%**

**Master Black Belt**  
**17%**

**Champion**  
**8%**

# Demographics: Companies

**N = 114**

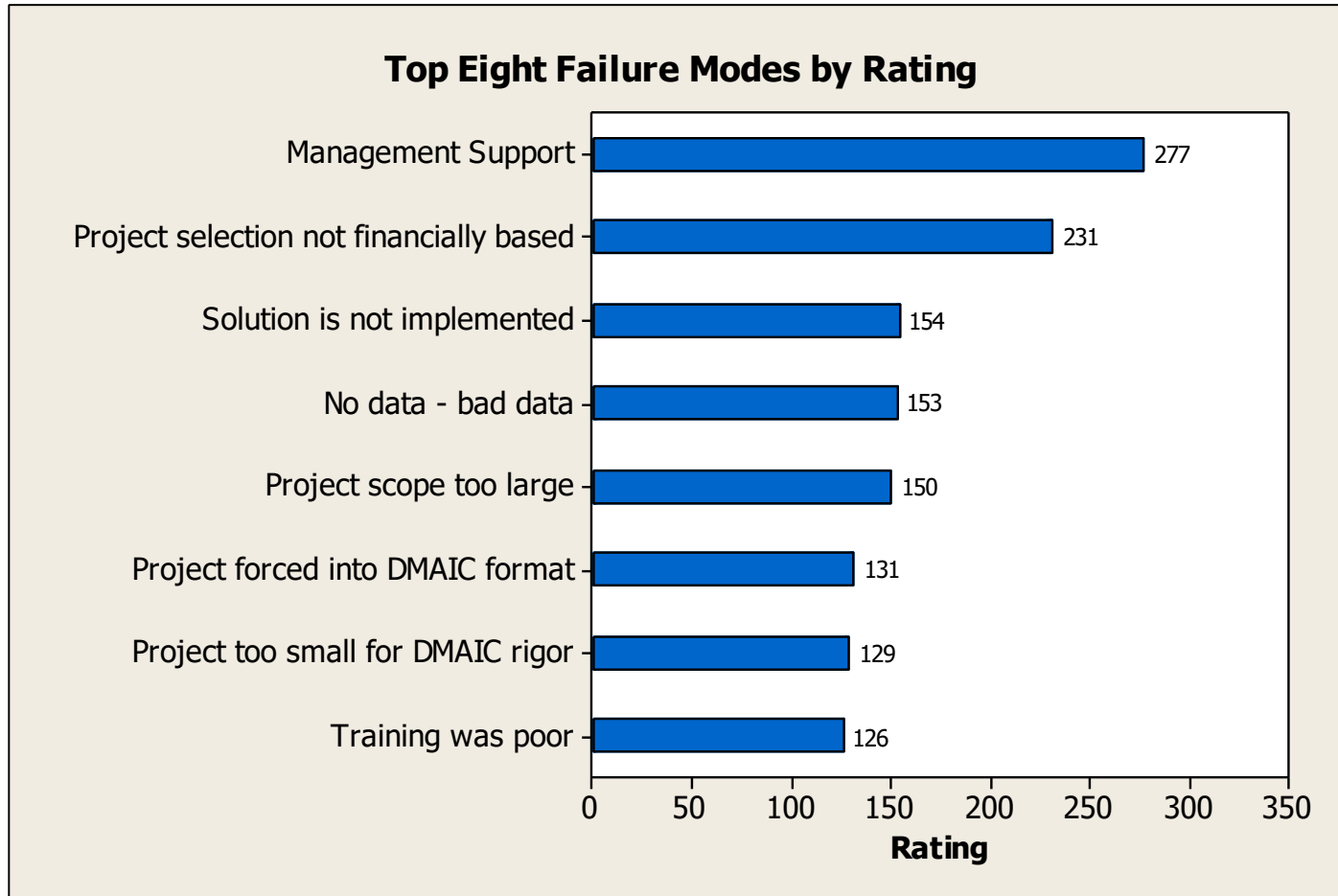
**Large Mfg.**  
**35%**

**Large Svc.**  
**18%**

**Small Mfg.**  
**32%**

**Small Svc.**  
**15%**

# Top 8 Reasons for Failure



## Causes that didn't show up on the list

- Project was too complex to solve
- No Rewards / Recognition program
- “We didn't understand the statistics behind Six Sigma”
- Politics



# Pay Scale & Opportunities



# Pay Scale in India

Employees with a Certified Six Sigma Black Belt Certification Salary Ranges by job				
Job Title	National Salary Data (?)	Rs 0	Rs 1.2M	Rs 2.4M
Six Sigma Black Belt Project Manager 90 Salaries	Rs 701,557- Rs 1,822,747			
Quality Manager 64 Salaries	Rs 520,800- Rs 1,700,945			
Process Improvement Manager 46 Salaries	Rs 465,398- Rs 1,634,057			
Operations Manager 39 Salaries	Rs 528,738- Rs 1,992,000			
Quality Assurance Manager 35 Salaries	Rs 484,790- Rs 2,265,997			

Source: <https://www.greycampus.com/opencampus/six-sigma-black-belt/career-opportunities-for-six-sigma-black-belt>

# Pay Scale in India

payscale.com/research/IN/Certification=Certified\_Six\_Sigma\_Black\_Belt/Salary

## Salary for Certification: Certified Six Sigma Black Belt

How should I pay?

What am I worth?

Price a Job

Find market worth

Overview

Salaries

Related Certifications

Job Title	Range	Average
Quality Manager	₹530k - ₹2m	₹1,219,474
Operations Manager	₹604k - ₹3m	₹1,225,543
Business Process / Management Consultant	₹498k - ₹3m	₹1,400,000
Six Sigma Black Belt Project Manager	₹822k - ₹2m	₹1,473,953
Vice President (VP), Operations	₹653k - ₹7m	₹3,144,660
Project Manager, (Unspecified Type / General)	₹604k - ₹3m	₹1,374,545
Assistant Manager, Quality Control	₹310k - ₹1m	₹717,491

< 1 2 3 ... 30 >

Currency: INR • Updated: Sep 18 2021 • Individuals Reporting: 895

Source:

[https://www.payscale.com/research/IN/Certification=Certified\\_Six\\_Sigma\\_Black\\_Belt/Salary](https://www.payscale.com/research/IN/Certification=Certified_Six_Sigma_Black_Belt/Salary)



# Pay Scale Survey by Indeed.com

(Last updated Last updated: October 1, 2021)

## Six Sigma Black Belt Careers

### Average salaries for "Six Sigma Black Belt" jobs in United States

Showing 9 salaries for "Six Sigma Black Belt" in United States

<b>Quality Engineer</b> 354 job openings	<b>\$76,770</b> per year	<b>Learning and Development Facilita...</b> 185 job openings	<b>\$74,798</b> per year	<b>Process Engineer</b> 173 job openings	<b>\$84,542</b> per year
<b>Senior Quality Engineer</b> 173 job openings	<b>\$105,135</b> per year	<b>Continuous Improvement Man...</b> 171 job openings	<b>\$117,399</b> per year	<b>Lean Six Sigma Specialist</b> 157 job openings	<b>\$97,201</b> per year
<b>Manufacturing Engineer</b> 149 job openings	<b>\$80,054</b> per year	<b>Quality Manager</b> 126 job openings	<b>\$85,720</b> per year	<b>Senior Process Engineer</b> 91 job openings	<b>\$98,873</b> per year

Sources: <https://www.indeed.com/salaries/Six-Sigma-Black-Belt-Salaries>

# Opportunities for Six Sigma Professionals

The screenshot shows a Google search results page for the query "six sigma opportunities in india". The search bar at the top contains the text "six sigma opportunities in india" with a magnifying glass icon on the left and a close button on the right. Below the search bar, there are tabs for "Jobs", "Saved", and "Alerts", with "Jobs" being the active tab. A hand cursor is hovering over the "Jobs" tab. Below the tabs, there are filter options for "Title", "Location", "Date posted", "Type", "Company type", and "Employer". A "Send feedback" link and a "Learn more" link are also visible. Below the filters, there are several filter buttons: "All", "Manager", "Consultant", "Operations", "Trainer", "Business", "Certified", "Delivery manager", "Professional", "Senior manager", "Analyst", and "Assistant manager". The main content area displays three job listings. The first listing is for "Six Sigma Black Belt" at HCL Technologies, Chennai, Tamil Nadu, via LinkedIn, posted 21 days ago, and is a full-time position. The second listing is for "6 Sigma Freelance Instructor" at JAGSAR, Hyderabad, Telangana, via SmartRecruiters Jobs, posted over 1 month ago, and is a part-time position. The third listing is for "Six Sigma" at Chhariot Solutions. The right-hand side of the screenshot shows a detailed view of the "Six Sigma Black Belt" job listing, including the HCL Technologies logo, the job title, the company name and location, a "SAVE" button, a share icon, and an "Apply on LinkedIn" button. Below the job title, there are sections for "Requirement" and "Soft Skills". At the bottom of the screenshot, there is a blue bar with a bell icon and the text "New job alerts" and a toggle switch.

# Available Jobs for Six Sigma Professionals on naukri.com

The screenshot shows the naukri.com website interface. At the top, the naukri.com logo is on the left, and navigation links for JOBS, RECRUITERS, COMPANIES, TOOLS, SERVICES, MORE, and LOGIN are in the center. A notification bell and 'FOR EMPLOYERS' link are on the right. Below the header, a search bar shows 'Showing jobs for 'six sigma' Modify' with a 'Save as Alert' button. The main content area displays '1 - 20 of 72 Six Sigma Jobs' and 'Sort by : Relevance'. On the left, there are filter sections for 'All Filters', 'Salary' (with options: 0-3 Lakhs (17), 3-6 Lakhs (53), 6-10 Lakhs (36), 10-15 Lakhs (11), + 1 More), 'Freshness' (Last 30 days), and 'Work from Home' (WFH during Covid (72)). The job listings include:

- Hiring For Speech Analyst** by Intelenet Global Services Private Limit... (3.7 stars, 3164 Reviews). Requirements: 0-5 Yrs, ₹ Not disclosed, Noida, Kolkata, H... (WFH during Covid). Skills: RCA, Excel Powerpoint, Interaction Analytics, Nice, Process Improvement, Verint. Status: HOT JOB, 29 DAYS AGO.
- Assistant Manager Quality** by Capita India Pvt. Ltd (3.7 stars, 1259 Reviews). Requirements: 4-8 Yrs, ₹ Not disclosed, Mumbai, Pune, M... (WFH during Covid). Skills: Black Belt / Green belt Certified / Trained At least 5-6 years experience in Quality wi... Skills: BPO, process improvement, Six Sigma, Green Belt, Six Sigma Certified.

On the right side, there are promotional banners for 'Get Personalised Job Recommendations' with a 'Register Now' button, and 'Missing out on relevant Jobs?' with a 'Know More' button.

# Available Jobs for Six Sigma Professionals on LinkedIn

The screenshot displays the LinkedIn job search interface. At the top, the search bar contains 'lean six sigma' and the location is set to 'City, state, or zip code'. Below the search bar, there are filter buttons for 'Jobs', 'Date Posted', 'Experience Level', 'Company', 'Job Type', 'On-site/Remote', 'Easy Apply', and 'All filters'. The search results are for 'Lean six sigma in India' with 1,425 results. A job alert toggle is set to 'Off'. The first job listing is 'Manager - Lean and Six sigma-CPG026832' at Genpact, Gurgaon, Haryana, India, with 11 connections working there and 6 applicants. The second listing is 'DG - Senior Manager - Lean Six Sigma Black Belt-RET001999' at Genpact, Hyderabad, Telangana, India, with 2 alumni working there and 4 applicants. The third listing is 'Senior Knowledge Management Consultant' at Leading MNC, Gurugram, Haryana, India (On-site), posted 5 hours ago with 15 applicants. The detailed view of this job shows it is a full-time position. The poster is Praveena Mishra, a Research Scholar and Recruitment Lead at HR Consultant, with a '2nd' badge. A 'Send InMail' button is visible. The bottom right corner shows a 'Messaging' button.

Lean six sigma in India  
1,425 results

Job alert Off

**Manager - Lean and Six sigma-CPG026832**  
Genpact  
Gurgaon, Haryana, India  
11 connections work here  
Promoted · 6 applicants

**DG - Senior Manager - Lean Six Sigma Black Belt-RET001999**  
Genpact  
Hyderabad, Telangana, India  
2 alumni work here  
Promoted · 4 applicants

**Senior Knowledge Management Consultant**  
Leading MNC  
Gurugram, Haryana, India (On-site)  
5 hours ago · Easy Apply

**Senior Knowledge Management Consultant**  
Leading MNC · Gurugram, Haryana, India (On-site) 5 hours ago · 15 applicants

Full-time

See recent hiring trends for Leading MNC. [Reactivate Premium](#)

[Easy Apply](#) [Save](#)

Posted by  
**Praveena Mishra** 2nd  
Research Scholar, Recruitment Lead at HR Consultant

PREMIUM  
[Send InMail](#)

Position Overview  
Role-Senior Knowledge Consultant  
Location-Gurgaon

Messaging

# Start up guide for Six Sigma





# Belt Structure in Six Sigma

01

## Six Sigma Yellow Belt

Participates as a project team member

02

## Six Sigma Green Belt

Leads Green Belt projects or teams.

03

## Six Sigma Black Belt

Leads big projects. Trains and coaches project teams.

04

## Six Sigma Master Black Belt

Trains and coaches Black Belts and Green Belts.



# Certification Procedure



# Certification by Stat Modeller

- Stat Modeller is MSME registered Training and Consultancy Company under the category of Management Consultancy (**Registration number-GJ24D0046701**)
- Knowledge-based and Project Based Assessment
- Trainer is the Awardee of Training Quality Excellence by ISTD and IQAC
- Trainer is certified NSDC and Skill India
- Trainer is the Six Sigma Black Belt with 10+ years of experience in this field
- Trainer has trained 10000+ participants from including MNCs on different topics such as Six Sigma, TPM, Data Science, Minitab, etc...
- Trainer is experienced in various fields such as manufacturing, chemical, process industry, service, etc.
- Trainer has guided 100+ improvement projects



# Company Registration

भारत सरकार  
Govt. of India  
सूक्ष्म, लघु और मध्यम उद्यम मंत्रालय  
MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES

**MSME**  
सूक्ष्म, लघु और मध्यम उद्यम  
MICRO, SMALL & MEDIUM ENTERPRISES

उद्योग आधार  
**UDYOG AADHAAR**  
MSME Udyog Aadhaar

**D**

Type of Enterprise	Micro	Small	Medium
Manufacturing	A	B	C
Services	D	E	F
UAM No.	GJ24D0046701		

**Udyog Aadhaar Registration Certificate**

Udyog Aadhaar Number: GJ24D0046701  
Name of Enterprise: STAT MODELLER  
Location of Plant Details:

SN	Flat/Door/Block No.	Name of Premises/Building Village	Road/Street/ Lane	Area/Locality	City	Pin	State	District
1	D-503	SHARNAM HAPPY HOMES	SAYAJI TOWNSHIP ROAD	SAYAJIPURA	VADODARA	390019	GUJARAT	VADODARA

Official Address of Enterprise: D-503, SHARNAM HAPPY HOMES, SAYAJI TOWNSHIP ROAD, SAYAJIPURA, VADODARA.  
District: VADODARA State: GUJARAT PIN: 390019  
Mobile No: 9898233268 Email: ceo@statmodeller.com

Date of commencement: 01/11/2019  
Major Activity: SERVICES  
Enterprise Type: Micro  
Previous Registration details-if any: ::  
National Industry Classification Code:

SN	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit Code	Activity Type
1	63 - Information service activities	6311 - Data processing, hosting and related activities	63111 - Data processing activities including report writing	Services
2	70 - Activities of head offices; management consultancy activities	7020 - Management consultancy activities	70200 - Management consultancy activities	Services

Acknowledgement Date of Filing: 17/12/2019 Date of Printing: 17/12/2019

Disclaimer: This is computer generated statement, no signature required.  
Printed from udyogaadhaar.gov.in  
MyMsme Mobile App (Beta Version) is available now for download. <https://play.google.com/store/apps/details?id=msme.mymsme>

SN	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit Code	Activity Type
1	63 - Information service activities	6311 - Data processing, hosting and related activities	63111 - Data processing activities including report writing	Services
2	70 - Activities of head offices; management consultancy activities	7020 - Management consultancy activities	70200 - Management consultancy activities	Services

# Project Assistance

- As a part of Certification, all students have to implement one Six Sigma Project in any industry
- Stat Modeller will recommend good and sincere students to their client to get the project
- Stat Modeller will guide 10 students in their project irrespective of where they are doing projects
- **Trainer will provide 1 visit Every Month (for 5 months after training) to review projects and provide guidance**

# Certificate Sample



## *CERTIFICATE*

*of Achievement*



This is to certify that

**PARTICIPANT'S NAME**

has successfully completed 5-Day workshop on  
**"SIX SIGMA BLACK BELT"**  
during October 5, 2021 to October 9, 2021  
and demonstrated required competency  
through examination, assignment and project.

Certificate Issue Date  
**May 27, 2022**

Certificate Number  
**SM/SSBB/0522/339**

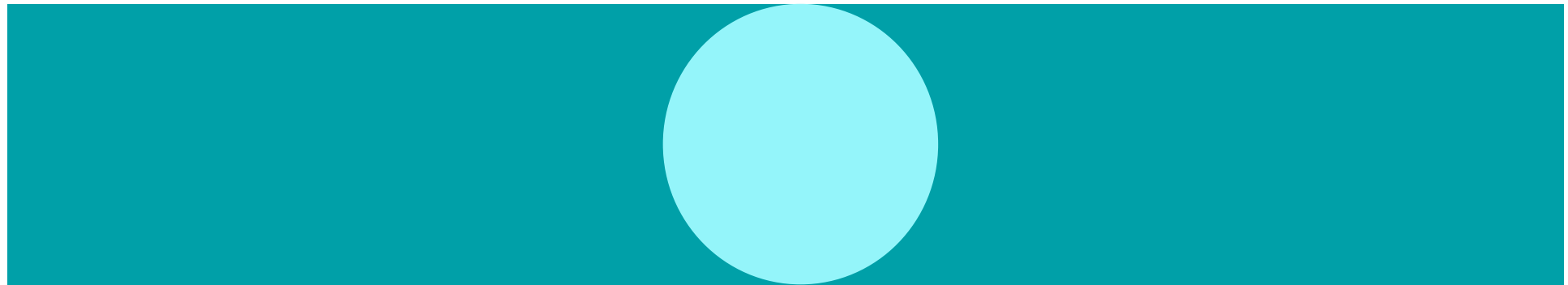
Prof.(Dr.) Jyoti M. Divecha  
HOD, Dept. of Statistics  
Sardar Patel University

Mr. Hiren Kakkad  
CEO & Co-founder  
Stat Modeller





# Case Study





**THANK YOU**





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Sayajipura, Vadodara - 390019



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www.statmodeller.com

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