DEPARTMENT OF MANAGEMENT STUDIES
SHRIMATI INDIRA GANDHI COLLEGE
TIRUCHIRAPPALLI – 620 002

PRODUCTION MANAGEMENT
P16MBA8

Unit – IV : Six sigma

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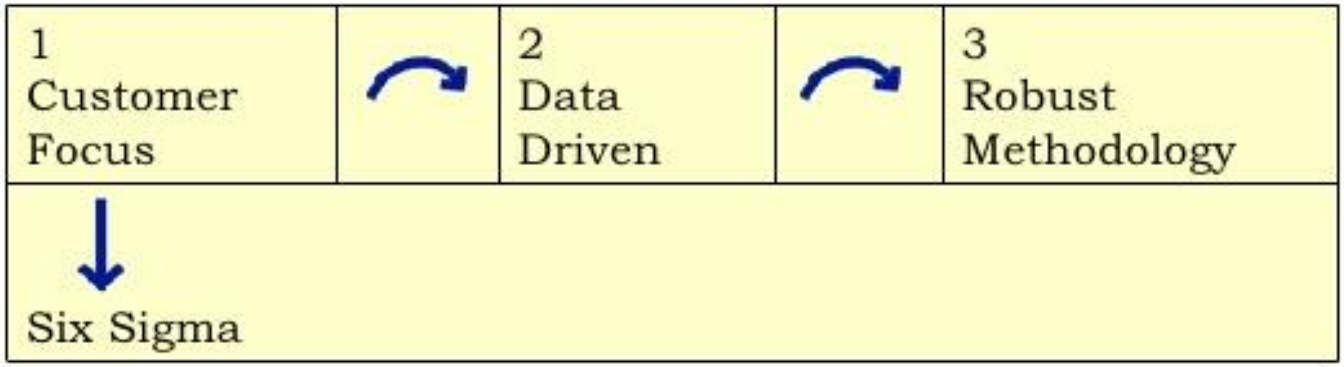
Six sigma, 6σ

- One of the foremost methodological practices for **improving customer satisfaction** and **improving business processes.**

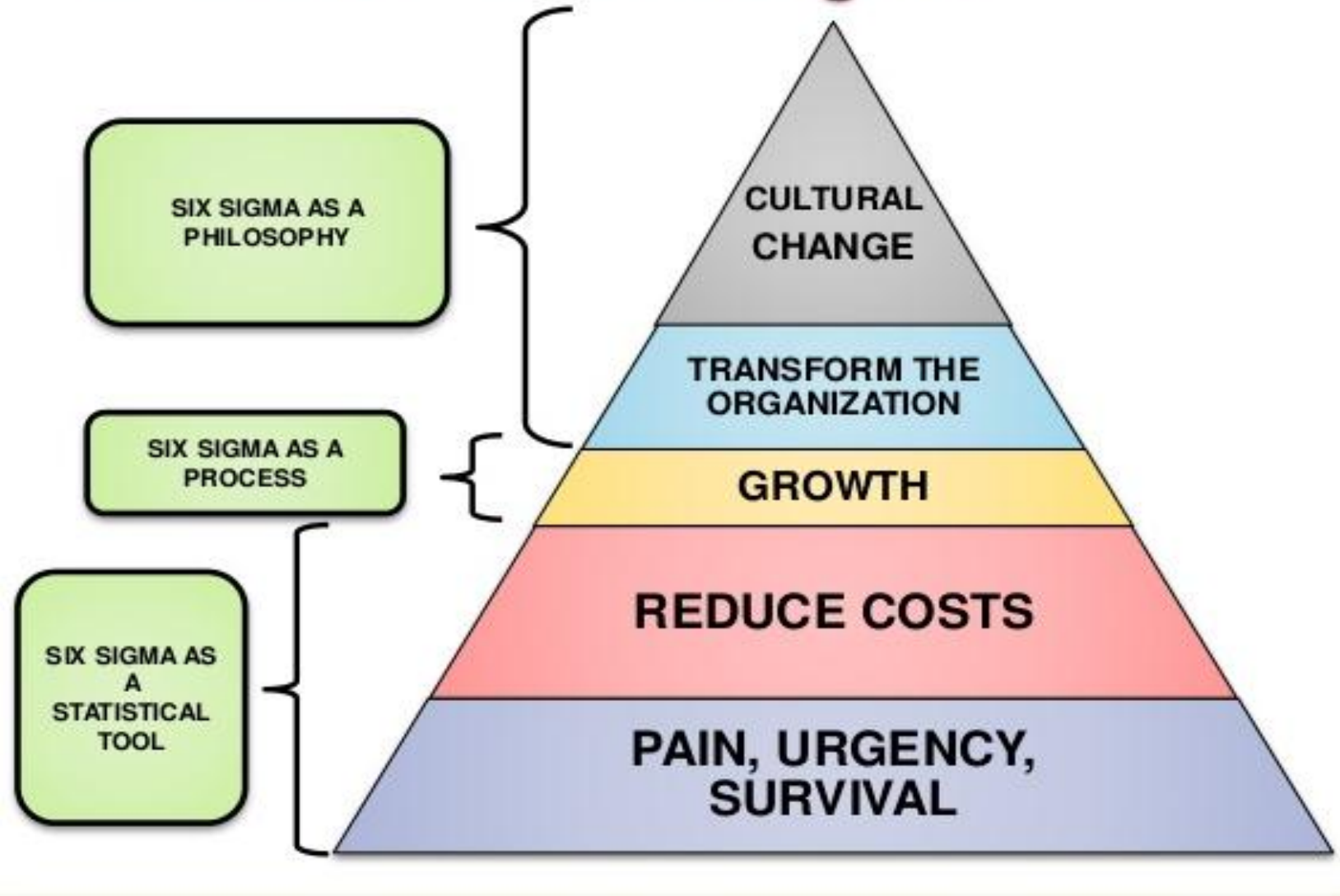
Definition – Six Sigma

Six Sigma is the measure of quality that strives for near perfection. It is a disciplined, data-driven methodology focused on eliminating defects. A Six Sigma defect is defined as anything that falls outside of a customer's specifications. Six Sigma is a reference to a statistical measuring system, equivalent to just 3.4 defects per every million opportunities (Snee, 2003).

THE THREE FUNDAMENTALS OF SIX SIGMA



Overview of Six Sigma



SIX SIGMA DEFINED

- In a narrow sense…
  - A metric based on Statistical Measure called Standard Deviation
- In a broader, business sense…
  - WORLD CLASS QUALITY providing a BETTER product or service, FASTER, and at a LOWER COST than our competitors.
- VARIATION… "the enemy of the customer satisfaction"

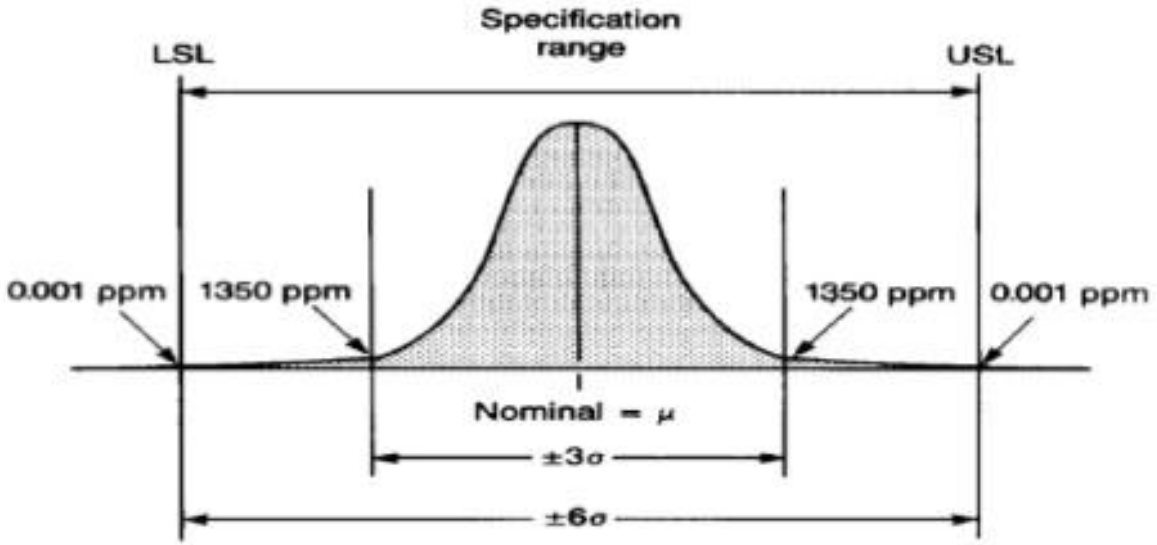


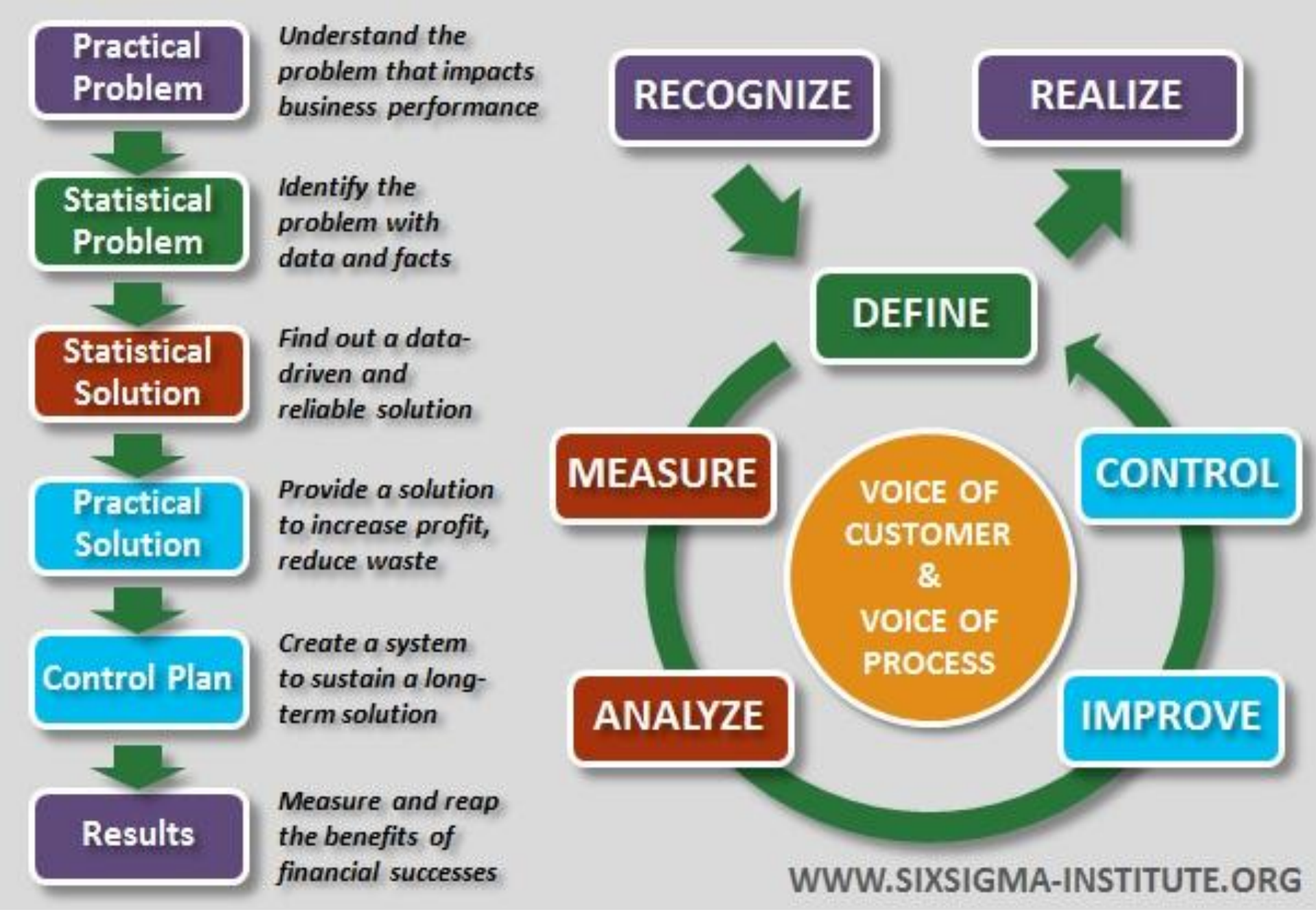
FIGURE 1.4 Normal distribution curve illustrates the Three Sigma and Six Sigma parametric conformance. (Copyright of Motorola, Inc., used with permission.)

Sigma Level	Defects per Million	Yield
6	3.4	99.99966%
5	230	99.977%
4	6,210	99.38%
3	66,800	93.32%
2	308,000	69.15%
1	690,000	30.85%

Six sigma – Practical meaning

SIGMA	Defect per million	Defect based on scale	Capability
6 sigma	3.4	Less than 10% of scale	World Class
5 sigma	230	10% to 15% of Scale	World Class
4 sigma	6200	15% to 20% Scale	Industry Average
3 sigma	67000	20% to 30% of Scale	Industry Average
2 sigma	310000	30% to 40% of Scale	Non competitive
1 sigma	700000		Non competitive

Six Sigma performance implies a level of process and product performance of no more than 3.4 defects per million opportunities

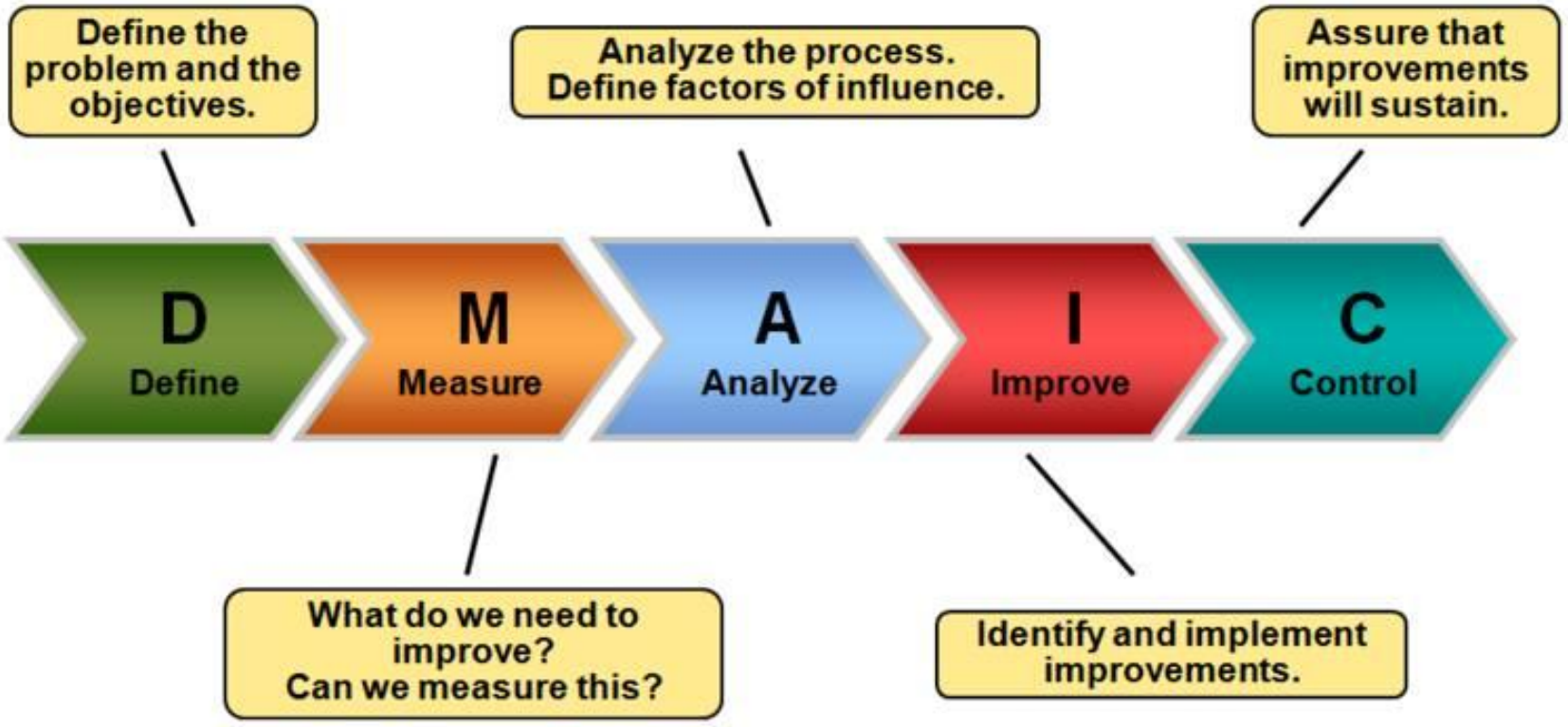

Practical Problem
Understand the problem that impacts business performance
Statistical Problem
Identify the problem with data and facts
Statistical Solution
Find out a data-driven and reliable solution
Practical Solution
Provide a solution to increase profit, reduce waste
Control Plan
Create a system to sustain a long-term solution
Results
Measure and reap the benefits of financial successes
RECOGNIZE
REALIZE
DEFINE
MEASURE
CONTROL
VOICE OF CUSTOMER & VOICE OF PROCESS
ANALYZE
IMPROVE
WWW.SIXSIGMA-INSTITUTE.ORG


Improving Customer Satisfaction
Reducing Wastage
Improving Quality
Objectives of Six Sigma
Reducing Defects
Reducing Cycle time

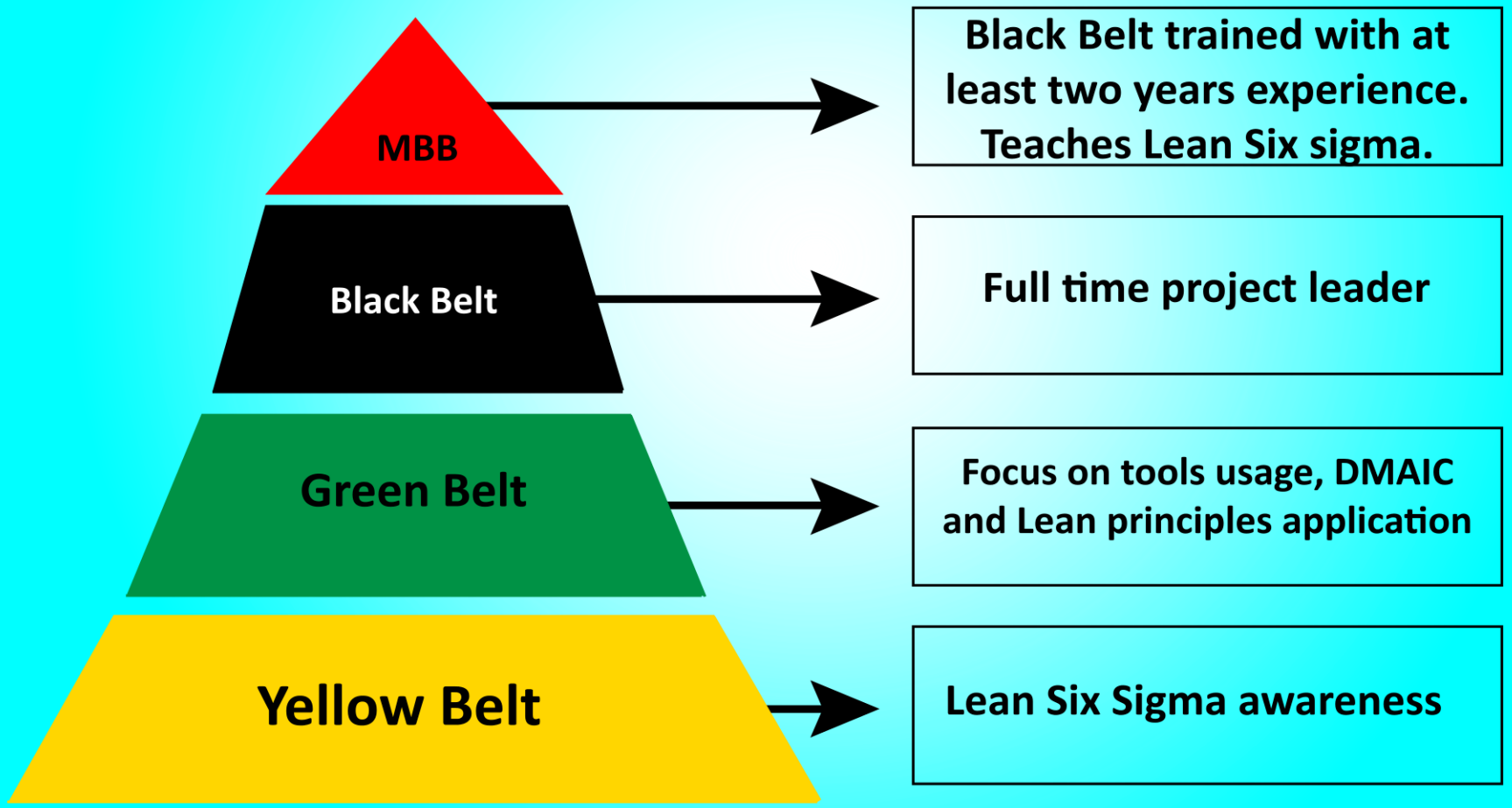
SIX SIGMA TOP 5 PRINCIPLES


DEFINE
MEASURE
ANALYZE
IMPROVE
CONTROL
SIX
SIGMA
6σ

DMAIC Roadmap



LEAN SIX SIGMA ORGANIZATION STRUCTURE



Six Sigma Certification Structure