



TOPIC: SIX SIGMA OVERVIEW

What is Six Sigma?

- Six Sigma is a Process Improvement Methodology
- It is data-driven and focuses on variation reduction
- Any process that is operating at Six Sigma level of performance, has less than 3.4 Defects in 1 million opportunities

What is Lean?

- Lean is nothing but elimination of waste
- Unlike Six Sigma, Lean is not data-driven
- Generally, Lean projects require lesser time to complete than Six Sigma projects
- Like Six Sigma, Lean is applicable in Manufacturing as well as Service industry

What is Lean Six Sigma?

- Lean Six Sigma projects are a combination of Lean and Six Sigma tools and techniques
- To improve processes better and faster, process improvement experts have started combining best practices of both Lean and Six Sigma
- This combination allows organizations to be more agile and proactive to today's fast paced situations as well as be accurate and responsive too

At what Sigma Level do average industries perform?

- Average industries perform at 3 Sigma level
- Best-in-class industries perform at 6 Sigma level
- Human related industries such as Transaction Processing business, back-office, business process outsourcing, doctors, lawyers, airline baggage service centers and other service industries perform at 2 Sigma levels





TOPIC: DMAIC & DMADV

What is the difference between DMAIC & DMADV?

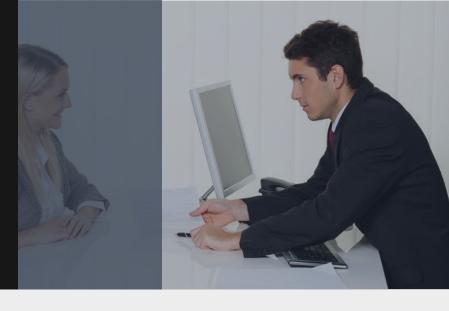
- DMADV is an acronym for Define-Measure-Analyze-Design-Verify
- DMAIC is an acronym for Define-Measure-Analyze-Improve-Control
- DMADV is used to help build new products / services
- DMAIC is used to help improve business processes of existing products / services
- DMADV does not require historical data it Designs a prototype and Validates its functionalities
- DMAIC depends on the use of historical data to Analyze, Improve and Control the rootcauses

DMAIC is based on which earlier known Improvement Cycle?

- DMAIC is based on Plan-Do-Check-Act OR the PDCA Cycle
- Plan-Do-Check-Act later as became known as the Plan-Do-Study-Act Cycle
- Define, Measure = Plan; Analyze = Do; Improve = Check; Control = Act

How long should each DMAIC Phase last?

- A Six Sigma DMAIC project runs on an average between 3 to 6 months
- Each project is unique. Hence, there is no specific guideline OR standard that states the time required. Time taken for each phase of the project will vary depending on a number of factors.
- For e.g.: If a business process has relevant data readily available, then the Define and Measure phases may be complete within 1 month. However, if the data is not readily available, then ample time needs to be given to collate the required data.
- Time taken to complete a each project phase also depends on a number of other factors such as:
 - o Ability of the Black Belt and Green Belt to drive project activities
 - o Complexity of the project
 - o Proximity of the project to the Champion
 - Organizational Environmental Factors
 - o How well is the project defined?



TOPIC: PROJECT CHARTER

Which are the 5 critical components of a Project Charter?

- · Problem Statement
- Goal Statement
- Project Scope
- Project Team
- · Project Milestones

Which are the 4 critical factors required to construct a good Problem Statement?

- · What is the problem?
- When/Where is the problem occurring?
- · Magnitude of the problem
- Consequence of the problem

What should a good goal statement be?

- A good goal statement should be "SMART"
- S = Specific
- M = Measurable
- A = Attainable
- R = Relevant
- T = Time-bound

Why do projects fail?

Top 3 reasons:

- Failure to Define the project correctly
- Scope Creep Changing scope of the project time and again
- <u>Communication</u> Failure to communicate project progress, risk, outcome and project related events to required stakeholders

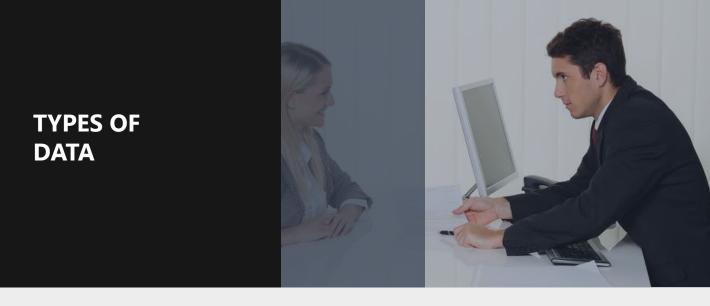


TOPIC: SIPOC

What is COPIS?

COPIS is the reverse of SIPOC. It stands for:

- Customers
- Outputs
- Process
- Inputs
- Suppliers



TOPIC: TYPES OF DATA

WHEN YOU CLASSIFY DATA AS CONTINUOUS OR DISCRETE, WHAT IS THE KEY QUESTION YOU ASK?

CAN THE GIVEN DATA BE FURTHER BIFURCATED INTO MEANINGFUL FRACTIONS?

EXAMPLE 01: IF THE GIVEN DATA IS NUMBER OF BOXES. THE KEY QUESTION YOU ASK IS, "CAN EACH BOX BE FURTHER SUB-DIVIDED INTO MEANINGFUL FRACTIONS I.E. CAN WE HAVE HALF A BOX OR ONE-TENTH OF A BOX?" THE ANSWER IS NO. WE COULD EITHER HAVE ONE, TWO OR THREE BOXES. HENCE, THIS IS DISCRETE DATA.

EXAMPLE 02: THE GIVEN DATA IS DISTANCE BETWEEN POINT A AND POINT B. THE KEY QUESTION YOU ASK IS, "CAN DISTANCE BE FURTHER SUB-DIVIDED INTO MEANINGFUL FRACTIONS?" THE ANSWER IS YES. DISTANCE BETWEEN POINT A AND B CAN BE 15 KILOMETERS, 10 METERS AND 4 CENTIMETERS I.E. IT CAN BE 15.104. THIS IS MEANINGFUL. HENCE, IT IS CONTINUOUS DATA.





TOPIC: IMPLEMENTATION OF A PILOT

WHY IS PILOT IMPLEMENTATION SO IMPORTANT?

WHEN IMPLEMENTING SOLUTIONS, YOU WILL MAKE CERTAIN CHANGES TO THE BUSINESS PROCESS WHICH ARE IRREVERSIBLE

IF YOU IMPLEMENT A PILOT, YOU WILL POTENTIALLY BE ABLE TO FORESEE THE EFFECTS OF THOSE IRREVERSIBLE CHANGES AND TAKE CORRECTIVE ACTIONS IN YOUR IMPLEMENTATION PLAN

SO, SHOULD YOU IMPLEMENT A PILOT ONLY FOR THOSE SOLUTIONS WHICH ARE IRREVERSIBLE?

NO, AS A BEST PRACTICE, PILOT SHOULD BE DONE FOR EVERY SOLUTION THAT WILL BE IMPLEMENTED

IT REDUCES THE RISK OF A FAILED IMPLEMENTATION

IT ALLOWS TEAMS TO IMPROVE A SOLUTION

IT ALLOWS YOU TO VALIDATE RESULTS

IT IS ESSENTIAL TO GAINING BUY-IN AND CREATING MOMENTUM