DMAIC – Continuous Improvement Model

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A S S O C I A T E S

DEFINE	MEASURE	ANALYSE	IMPROVE	CONTROL
Let's be clear about what we are trying to achieve !	Let's ensure we can show a quantifiable difference !	Let's get an in depth understanding of the issue !	Let's select the best solution and put it in place !	Let's make sure the solution remains robust !

What to do at each stage

DEFINE

Define the following :-
- The Problem Statement
- The Customer
- The Project Sponsor & Team
- The Business Case
- Aims and Objectives
- A Set Of SMART Goals
- Project Charter
- Scope
- Work Breakdown
- Stakeholder Analysis
- Communications Plan

MEASURE
- Adopt the right measures
- Establish a measurement system
- Confirm the measures are sensitive enough to show the sought after result
- Ensure data collection is adequate and repeatable
- Decide on a graphical display technique
- Measure the current state / current reality
- Answer "where are we today ?"

ANALYSE
- DON'T jump into a change solution before proper analysis is completed
- Clarify what's a symptom and what's a root cause
- Separate out facts from opinions and assumptions
- Establish what the data is telling us
- What really needs changed
- List and evaluate a range of potential solutions

IMPROVE
- Select a solution to test
- Pilot the change
- Review the results
- Amend the solutions accordingly
- Confirm that the goals can be achieved
- Create a plan for full implementation
- Execute the change in full
- Confirm results
- Quantify the difference

CONTROL
- Establish appropriate monitoring and control
- Create a 'flag' system
- Deliver training
- Create necessary documentation
- Deploy the new process in the culture of the organisation
- Review what you have learned and build it in next time

Process arrows

Define → **Measure** → **Analyse** → **Improve** → **Control**
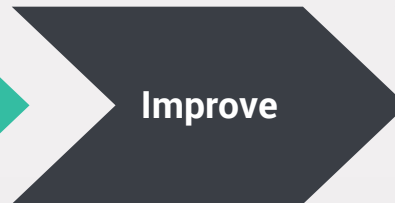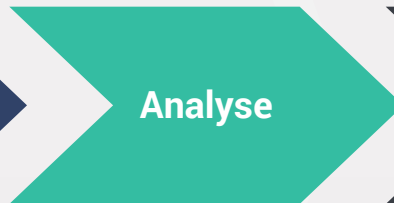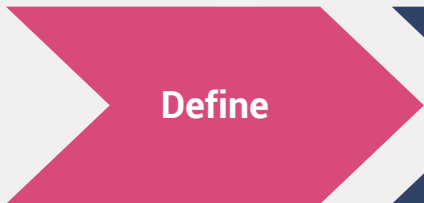
Suggested tools to use

Define
- Problem Statement Formats
- Operational Definition
- Voice of the Customer
- CTQ's
- Cost Benefit Analysis
- Frame the Issue
- Project Management Charter & Toolkit
- SIPOC
- Affinity Diagram

Measure
- Measurement Systems Analysis
- Summary Statistics
- Pareto & Pie Charts
- Histograms
- Process Capability Charts
- Trend Charting
- Scatter Plots & Correlation
- Bar Charts
- Individual Value Plots
- Cost of Poor Quality
- Defectives / DPU / DPO

Analyse
- Brainstorming
- Root Cause Analysis
- Fish Bone Diagrams
- Cause Screening
- 5 – Why's
- Process Mapping with Data
- Value Stream Analysis
- Cost / Cycle Time / Value Add Analysis
- 8 Wastes
- Process Sequence Chart
- QFD
- FMEA / Risk Assessment

Improve
- Solutions Ranking
- 5 Lean Principles
- Lean Process Design
- Standardised Working
- Takt Time, Cycle Time, Lead Time
- Kanban, Pull Systems
- 5-S
- SMED
- Mistake Proofing
- Solutions Transfer Planning

Control
- Roll out of solutions
- Traffic Light Control Systems
- Trend Charting
- Process Control
- SPC Charting
- Auditing / Monitoring
- Writing SOPs
- Training
- Post Partum Session