

PM07: Six Sigma DMEDI Methodology

Drive and Develop Your Team

Caroline Gray

PhUSE EU Connect 2019





● **Six Sigma Crash Course**



● **A Practical Example**



● **How to Get Your Team Involved**



● **Personal Experience**



● **Conclusion**

Six Sigma Crash Course

(Super Quick)



cros nt

A Data-Driven CRO





Overview

- Defined Management Framework
- Blend of Statistics, Management, Business and Engineering
- Lots of Tools & Techniques
- Many Adaptations (DFSS, Lean)



Six Sigma®

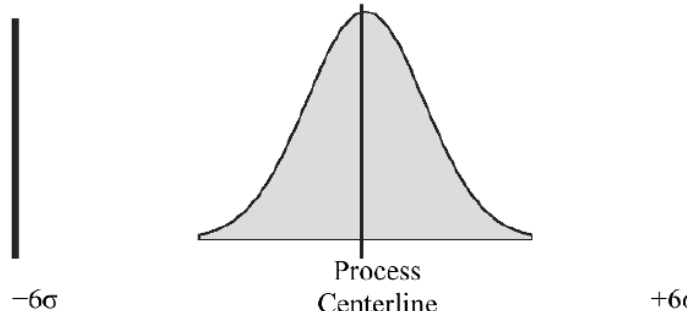


DMAIC

- Typical approach using Define, Measure, Analyse, Improve and Control
- Used to improve an **existing** process
- Good for highly automated/repetitive tasks

History

- Began in 1986 at Motorola
- Developed to reduce variance in the electronics manufacturing process



Lean Six Sigma

- Focuses on analyzing workflow to reduce cycle time and eliminate waste
- Maximize value to the customer using as few resources as possible

Statistically Speaking

- Data-driven approach to eliminate defects from a process
- Aim to get within six standard deviations between the mean and the nearest limit
- Area under the curve where probability of a defect is almost nil



6σ



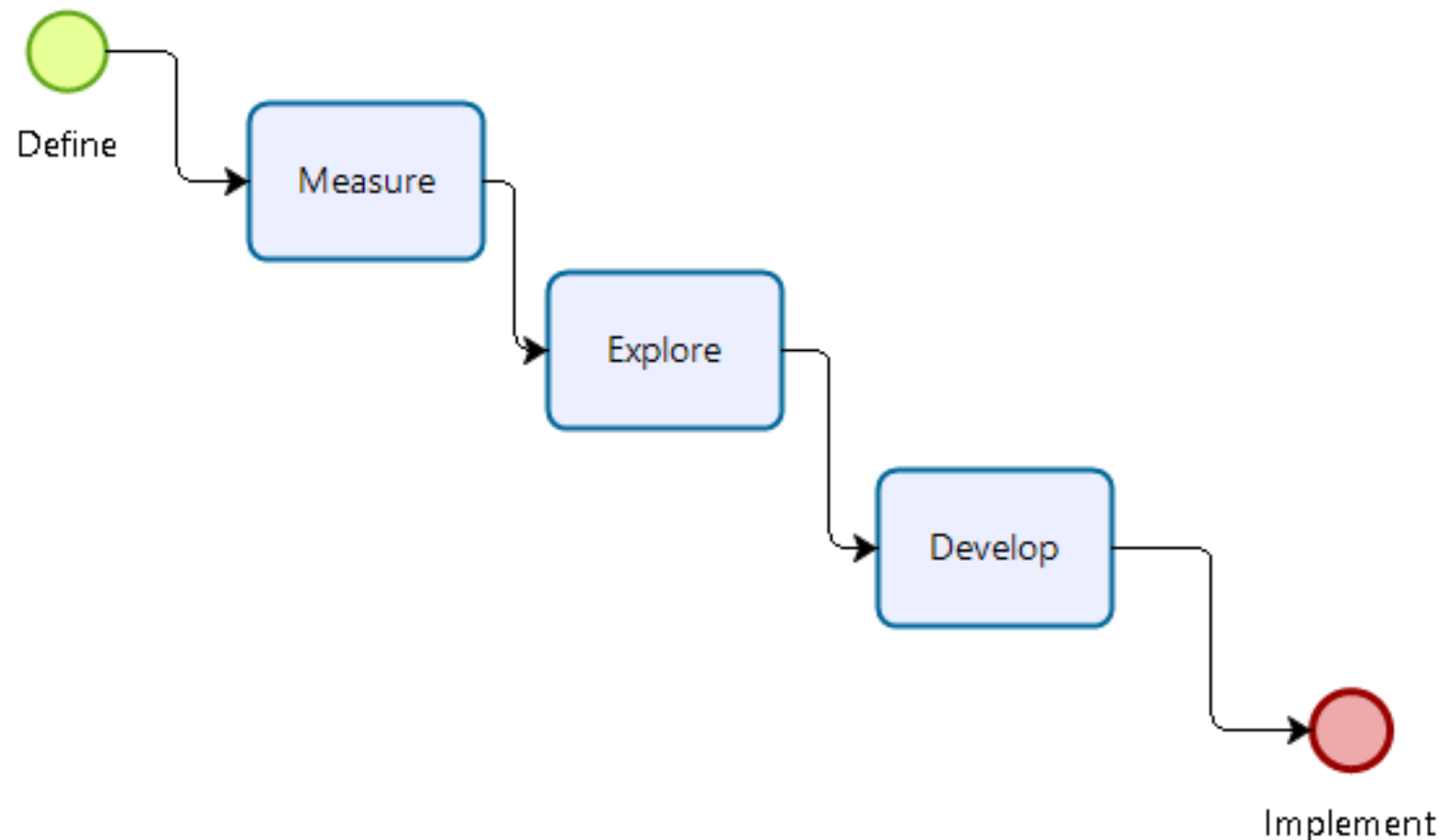
Design for Six Sigma

- Used to develop a new/redesign of a process
- Highly adaptable
- Good for service industry





Six Sigma DMEDI Approach



DMEDI

- Uses DFSS as a basis
- Five Step Process
- Each step has tools & techniques
- Less Rigid than DMAIC
- Used for New Processes
- Customer Focused

A Practical Example



cros nt

A Data-Driven CRO



A Practical Example

A Data-driven CRO



Requirements ◀



▶ Client Expectations

Develop a new tool to
create data visualization
drill-down reporting

Challenges ◀





Description

Define the purpose, structure, goals and the value to the team/company. What are the benefits/challenges/risks?



Tools & Techniques

- Project Charter
- SIPOC
- Communication Plan



Benefits

- Better Documentation and Planning
- Business Understanding
- Process Awareness and different perspectives





Description

Gather the needs of the customer/project and how these can be measured



Tools & Techniques

- Voice of the Customer/Business (VOC/VOB)
- Critical Customer Requirements (CCR)
- Kano Model



Benefits

- Client interaction skills/relationship building
- Objective thinking about customer requirements
- Exposure to financial implications





Description

Explore a conceptual design of the new data visualisation tool



Tools & Techniques

- Brainstorming/Affinity Diagram
- Pareto Chart
- Pugh Matrix



Benefits

- Develop leadership skills
- Drive ideas and collaboration
- Decision making and critical thinking





Description

Develop a detailed plan on how you are going to organize and implement this data visualisation tool at its optimal state



Tools & Techniques

- Design of Experiments
- FMEA Analysis
- Risk Assessment/Management Plan



Benefits

- Cause & Effect concepts
- Risk mitigation mindset
- Optimization techniques





Description

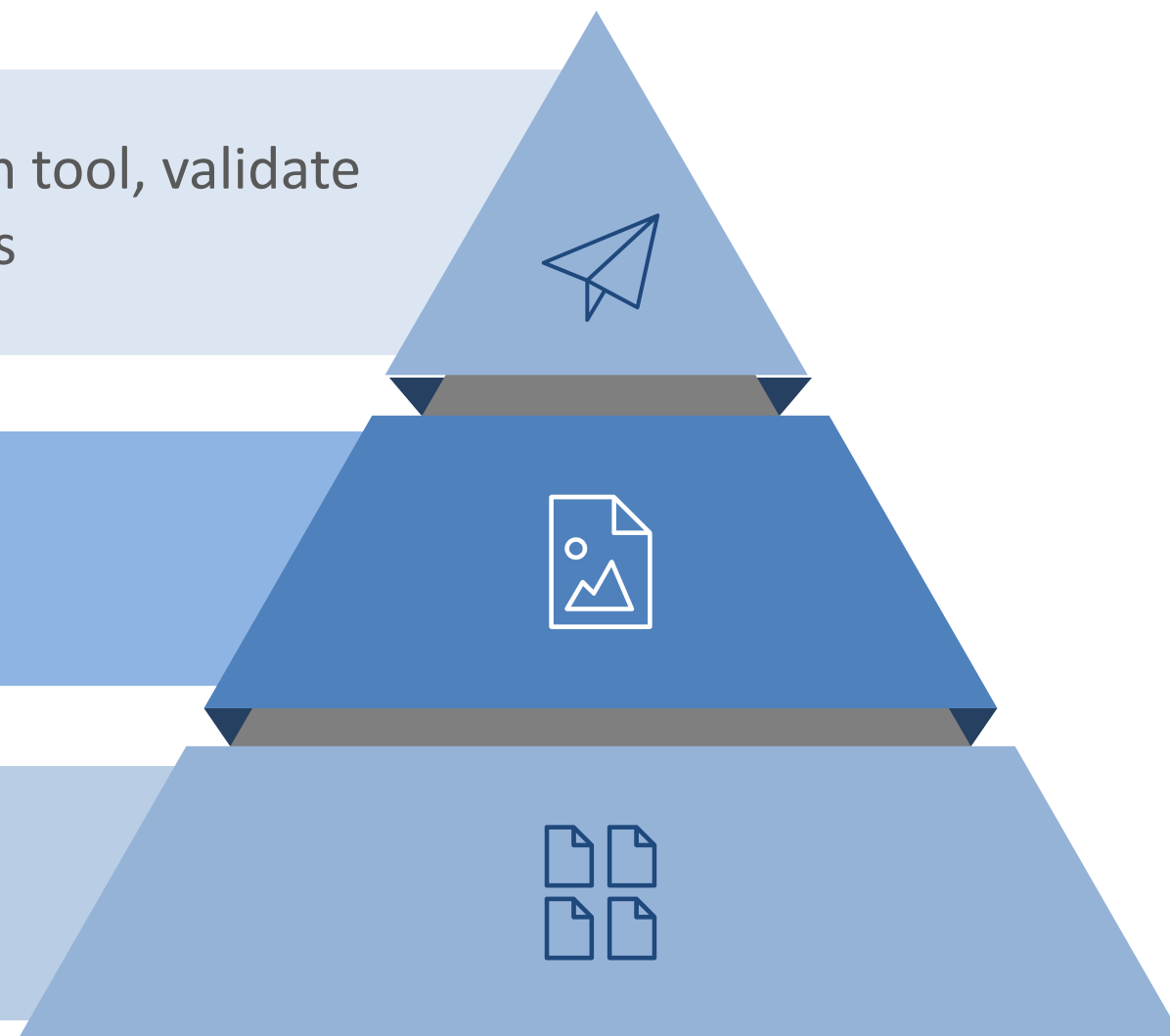
Implement the data visualisation tool, validate the design and establish controls

Tools & Techniques

- Pilot
- Control Plan
- Design Scorecard

Benefits

- Confidence leading projects
- Awareness of quality standards
- Metrics & KPI's



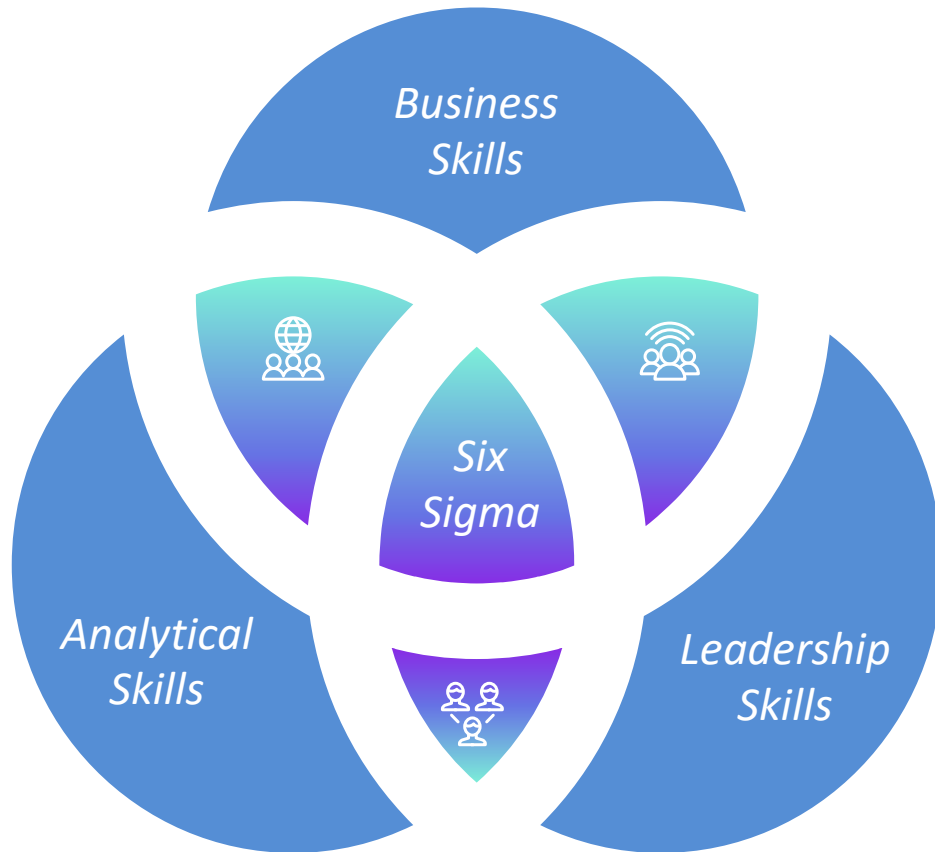
How to get your team involved



cros nt

A Data-Driven CRO





- You probably already use a lot of the tools/techniques
- You do not need to be an expert
- You can grow with your team and learn something new
- Get your hands dirty
- Start using the tools/techniques in everyday work
- Encourage your team to take a similar approach

Search for Six Sigma and Google will give you ~ 168,000,000 results



Junior Level

- Kanban
- 5 Whys Strategy
- Flow Chart
- Brainstorming



Mid/Senior Level

- Ishikawa Diagram
- Pareto Chart
- Poke Yoke
- Gantt Charts
- VOC
- Kano Model
- Design Scorecard
- Control Plan
- Communication Plan



Principal/Manager Level

- FMEA Analysis
- Project Charter
- VOB
- Risk Assessment
- Risk Management Plan
- Design of Experiments
- Pugh Matrix
- SIPOC
- Affinity Diagram

Build Skills as Levels Increase



Define

- Project Charter
- SIPOC Mapping
- RACI Charts
- Stakeholder Analysis
- Communication Plan

Measure

- Critical to Quality Tree
- Kano Analysis
- Histograms
- Voice of the Customer
- Voice of the Business

Explore

- 5 Why
- Brainstorming
- Affinity Diagrams
- Pareto analysis
- Pugh Matrix

Develop

- 5 Why Analysis
- Ishikawa Diagram
- FMEA
- Design of Experiments
- Hypothesis Testing
- Risk Assessment
- Management Plan

Implement

- Metrics & KPI's
- Standard Operating Procedures
- Process Control Plans
- Kanban
- Design Scorecard

Find More Tools/Techniques: <https://asq.org/quality-resources/quality-tools>

Personal Experience



cros nt

A Data-Driven CRO





Management Yo-Yo

- Developing your team is a constant balancing act
- On the Job Training and Development
- Technical, business and soft skills required

Your Role In This

- Get the best from your team
- Develop skills that help your team, the customer and the company
- Challenge, Motivate, Drive and Develop



Why Six Sigma?

- Statistically focused, Structured and Practical
- Can improve your processes while developing your team
- Change of team mindset
- Any level programmer can get involved. Add-on skills over time

Leadership

- Six Sigma is perfect for building leadership skills
- Develops in multiple areas at once
- Practical tools/techniques
- Improves business acumen and customer focus



- Increased Engagement and Motivation
- Continual Learning Environment
- Process Improvement & Quality mindset
- Better Documentation
- Increased Customer Focus
- Competitive Edge



A large blue circle containing the text "THANK YOU" in white, bold, sans-serif capital letters. The circle is partially overlaid by a grayscale image of a modern skyscraper with a curved facade. Two thin black curved lines with dots at their ends frame the circle on the left and right sides.

THANK YOU



A Data-Driven CRO

www.crosnt.com



- **Caroline Gray**

- Director of Statistical Programming & FSP
- Cork, Ireland
- caroline.gray@crosnt.com
- Skype: caroline.gray_9
- Website: <https://www.crosnt.com/>

