



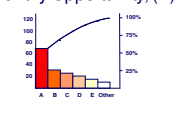

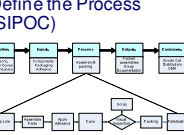
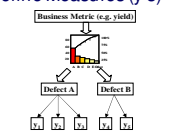
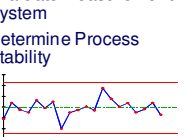

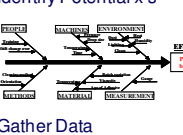



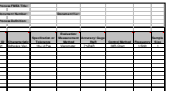
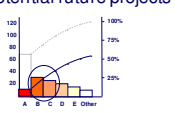
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Operational Green Belt Training Programme

Operational Six Sigma focuses on the application of the Six Sigma methodology to manufacturing process improvement. This is achieved through the use of a structured process for improvement (DMAIC), supported by a wide range of improvement tools to identify and then reduce or eliminate sources of variation.

The Operational Green Belt course is designed for all those concerned with quality improvement in a production, engineering or development role. The training programme consists of 12 training days split into four modules of 3-days (course can also be structured as three modules of 4-days). The modules are typically separated by one month to allow time for the application of the learning to company projects.

The training style is highly interactive, utilising workshops to reinforce the main teaching points. Delegates are encouraged to come to the training with high priority company projects that will give them an opportunity to apply their learning and for the company to quickly get a return on their investment in the Green Belt. The training utilises the Minitab statistical analysis software tool.

| Define | Measure | Analyse | Improve | Control | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <p>Identify Opportunity, (Y)</p>  <p>Complete Project Charter</p>  <p>Form the Team</p> <p>Define the Process (SIPOC)</p>  <p>Define Boundaries</p> <p>Identify Customer Requirements</p> <p>Start Project File</p> <p style="text-align: center; background-color: #003366; color: white; padding: 2px;">Phase Review</p> | <p>Define Measures (y's)</p> <p>Business Metric (e.g. yield)</p>  <p>Evaluate Measurement System</p> <p>Determine Process Stability</p>  <p>Determine Process Capability</p>  <p>Determine Improvement Approach (Mistake Proofing, Stability, Variation Reduction)</p> <p style="text-align: center; background-color: #003366; color: white; padding: 2px;">Phase Review</p> | <p>Identify Potential x's</p>  <p>Gather Data</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th>Defect Type</th> <th colspan="3">Product Type</th> </tr> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>Misplaced</td> <td>///</td> <td>///</td> <td>///</td> </tr> <tr> <td>Wrong Component</td> <td>///</td> <td>///</td> <td>///</td> </tr> <tr> <td>Missing Component</td> <td>///</td> <td>///</td> <td>///</td> </tr> <tr> <td>Damaged Component</td> <td>///</td> <td>///</td> <td>///</td> </tr> <tr> <td>Others</td> <td>///</td> <td>///</td> <td>///</td> </tr> </tbody> </table> <p>Analyse Data</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th>Item</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> <th>F</th> <th>G</th> </tr> </thead> <tbody> <tr><td>1</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>2</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>3</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>4</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>5</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>6</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>7</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>8</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> </tbody> </table> <p>Identify Key X(s)</p> $y = f \left[\begin{matrix} x_1 & x_2 & x_3 \\ x_4 & x_5 & x_6 \end{matrix} \right] ?$ <p style="text-align: center; background-color: #003366; color: white; padding: 2px;">Phase Review</p> | Defect Type | Product Type | | | | A | B | C | Misplaced | /// | /// | /// | Wrong Component | /// | /// | /// | Missing Component | /// | /// | /// | Damaged Component | /// | /// | /// | Others | /// | /// | /// | Item | A | B | C | D | E | F | G | 1 | + | + | + | + | + | + | + | 2 | + | + | + | + | + | + | + | 3 | + | + | + | + | + | + | + | 4 | + | + | + | + | + | + | + | 5 | + | + | + | + | + | + | + | 6 | + | + | + | + | + | + | + | 7 | + | + | + | + | + | + | + | 8 | + | + | + | + | + | + | + | <p>Determine Stability & Capability of Key X(s)</p> <p>Establish $y=f(x)$ Relationship</p>  <p>Establish Targets & Tolerances for Key X(s)</p>  <p>Implement Mistake Proofing</p> <p>Verify Process Improvement</p>  <p style="text-align: center; background-color: #003366; color: white; padding: 2px;">Phase Review</p> | <p>Develop, Implement and Validate Control Plan:</p> <ul style="list-style-type: none"> - Control Key X(s) - Monitor y's  <p>Update Systems, SOPs and Documentation</p> <p>Identify Training Requirements</p> <p>Recommend areas for potential future projects</p>  <p>Make Project Presentation</p> <p style="text-align: center; background-color: #003366; color: white; padding: 2px;">Project Review</p> |
| Defect Type | Product Type | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | A | B | C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Misplaced | /// | /// | /// | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wrong Component | /// | /// | /// | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missing Component | /// | /// | /// | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Damaged Component | /// | /// | /// | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Others | /// | /// | /// | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Item | A | B | C | D | E | F | G | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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Module 1 – Foundation Module (3 days)

Contents:

- Introduction to Six Sigma
- Structured Problem Solving
 - Seven Basic Tools Check Sheets
 - Pareto Diagrams
 - Scatter Diagrams
 - Cause & Effect Diagrams

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- Histograms
- Flow Charts
- Control Charts
- Introduction to Minitab
- Foundational statistics
- Overview of Operational DMAIC
- Project Charter

Module 2 – Define/Measure (3 days)

Contents:

- Operational DMAIC
- Customer Focus
- Drill down
- Analysis of Variance, ANOVA
- Measurement Systems Analysis, MSA
- Control Charts
- Process Capability
- Project Work and Presentations

Module 3 – Analyse/Improve (3 days)

Contents:

- Operational DMAIC
- Hypothesis Testing
- Fault Tree Analysis
- Correlation & Regression
- Design of Experiments
- Project Work and Presentations

Module 4 – Improve/Control (3 days)

Contents:

- Operational DMAIC
- Screening Experiments
- Mistake Proofing
- Process FMEA
- Control Plans
- Extended DMAIC workshop
- Project Work and Presentations

The contents and the timing of the training can be adjusted to meet your specific requirements.

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