Six Sigma Lean Black Belt Standards

Introduction

The below standards represent the minimum required standards for understanding of Six Sigma principles at the Black Belt level. Training organizations must present this information to comply with the SSQS standard. Elements do not necessarily need to be presented in the order shown below. Trainers and organizations are encouraged to teach additional information above and beyond these standards at each level.

Body of Knowledge

1. General Topics
   1.1. History and overview of Six Sigma
   1.2. y = f(x)
   1.3. Process Variances
   1.4. TQM and other competing quality process improvement methods
   1.5. Understanding and recognizing opportunities to use Six Sigma within an organization
   1.6. Managing and understanding Quality as seen by the customer
   1.7. Deciding when to start a Six Sigma project
   1.8. Organizational Roles and Responsibilities of project members

2. General Topics 2
   2.1. DMADV (Design for Six Sigma) variation
   2.2. Critical to Quality (CTQ)
   2.3. Cost of Poor Quality (COPQ)
   2.4. Project Leadership & Mentoring
   2.5. Understanding of Six Sigma Champion role

3. DMAIC – Define
   3.1. Defining a project
   3.2. The project charter
   3.3. Developing the business case
   3.4. Developing the project team
   3.5. Voice of the Customer
   3.6. SIPOC
   3.7. Define Phase Review

4. DMAIC - Measure
   4.1. Process Mapping
   4.2. Basic Six Sigma statistics
   4.3. Cause & Effect
   4.4. Basic data collection
   4.5. Variation
   4.6. FMEA & Gage R&R
   4.7. Baseline Performance
   4.8. Statistical software options
   4.9. Measure phase review

5. DMAIC - Analyze
   5.1. Charting Data (Run Chart, Pareto, Histogram)
   5.2. Root Cause Analysis
   5.3. Correlation and Regression
   5.4. Hypothesis Testing
   5.5. Analysis of Variance (ANOVA)
   5.6. Design of Experiments (DOE)
   5.7. Verify root causes
   5.8. Analyzing opportunities
   5.9. Analyze phase review

6. DMAIC - Improve
   6.1. Brainstorming
   6.2. Improvement opportunities
   6.3. Plan for implementation
   6.4. Improve phase review

7. Control
   7.1. Control plan
   7.2. Statistical Process Control Plan
   7.3. Final tollgate

Lean Methodology

The following components are required for Lean Six Sigma training.

8. Lean Components
   8.1. Basics of Lean
   8.2. Muda, Mura Muri
   8.3. Kanban
   8.4. Just-in-time
   8.5. Kaizen
   8.6. 5S
   8.7. Push vs Pull
   8.8. TIMWOOD