

Body of Knowledge

I. Introduction

- A. Bibliography
- B. Lean Six Sigma BOK
- C. Lean Six Sigma Glossary

II. Lean Six Sigma Goals

- A. Value of Lean Six Sigma
- B. Origins of Lean Six Sigma
- C. Lean Pioneers
- D. Quality and Six Sigma Gurus
- E. Organizational Leadership
- F. Business Metrics and Goals

III. Lean Six Sigma Goals

- A. Linking Projects to Goals
- B. Problem Solving Methodologies
- C. Project Selection
 - 1. Process Elements
 - 2. Stakeholder Analysis
 - 3. Customer Data
 - 4. QFD
 - 5. Benchmarking
- D. Risk Analysis
- E. Project Management Techniques
 - 1. Plan Elements
 - 2. Work Breakdown Structure
 - 3. Planning Tools
 - 4. Project Documentation
- F. Business Metrics and Goals

IV. Team Organization and Dynamics

- A. Initiating Teams
- B. Team Roles
- C. Team Stages
- D. Team Dynamics
- E. Conflict Resolution
- F. Team Tools
- G. Performance Evaluation

V. Defining Opportunities

- A. Project Charter
- B. A3 Report
- C. Definition Tools
- D. Customer Inputs
- E. Lean Thinking
- F. Cycle Time Reduction

G. Value Stream Mapping

H. Process Mapping

I. Spaghetti Diagrams

VI. Measurement Techniques

- A. Process Analysis
 - 1. Procedures and work instructions
 - 2. Takt Time
 - 3. Lean Six Sigma Metrics
- B. Data Collection
 - 1. Types of Data
 - 2. Data Collection Methods
 - 3. Measurement Scales
 - 4. Data Accuracy
- C. Measurement Systems
- D. Process Capability Analysis
 - 1. Normal Distribution
 - 2. Process Capability Studies
 - 3. Capability Indices

VII. Analysis Techniques

- A. Seven Classical Wastes
- B. Variable Relationships
 - 1. Multi-Vari Analysis
 - 2. Linear Correlation and Regression
- C. Hypothesis Testing
 - 1. Fundamental Concepts
 - 2. Point and Interval Estimation
 - 3. Means Tests
 - 4. Variance Tests
 - 5. Analysis of Variance (ANOVA)

C. Root Cause Analysis

VIII. Improvement Techniques

- A. Eliminating Wastes
 - 1. 5S
 - 2. Kanban (Pull)
 - 3. Poka-Yoke
 - 4. Setup Reduction
 - 5. Flow Improvement
 - 6. Quick Response Manufacturing

B. Kaizen

C. Theory of Constraints

D. Design of Experiments

E. Implementing and Validating Solutions

F. Measurement Systems Re-analysis

IX. Control Concepts

- A. Quality Controls
- B. Control Plans
- C. Control Charts
- D. Total Productive Maintenance (TPM)
- E. Visual Systems
- F. Standard Work
- G. Training

X. Design Improvement

- A. DFSS
- B. Quality Function Deployment (QFD)
- C. Robust Design Concepts
- D. FMEA/FMECA
- E. Design for X (DFX)
- F. Special Design Tools

