

Activities and Tools

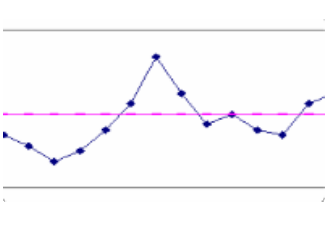
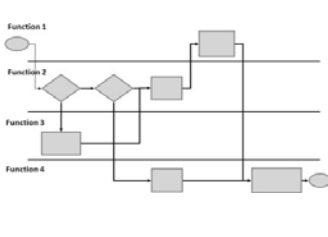
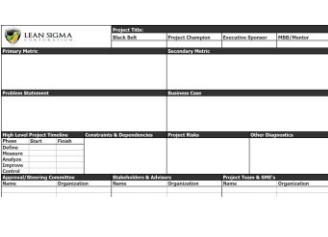

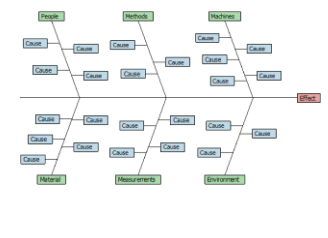

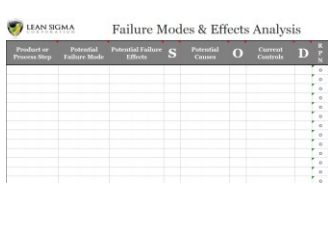
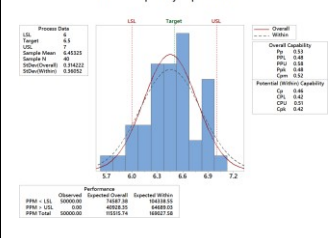
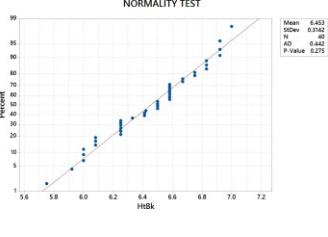
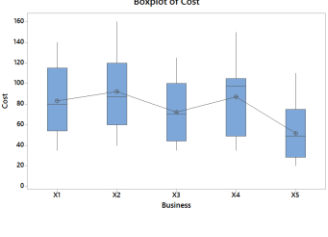

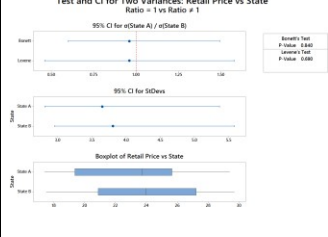
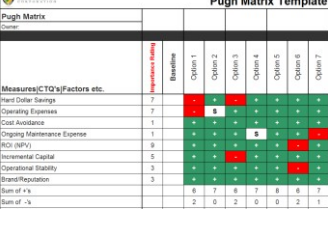
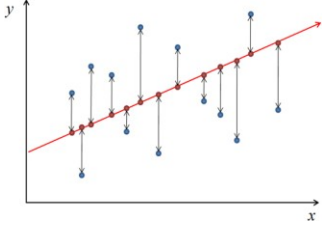
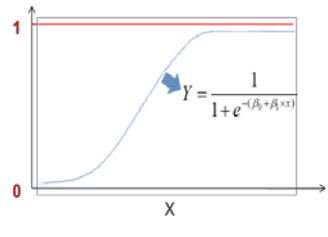
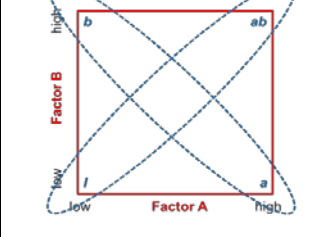
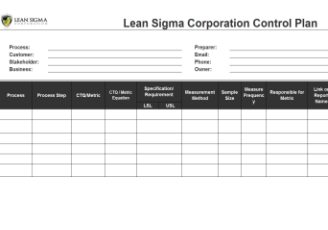
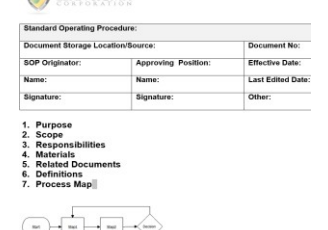
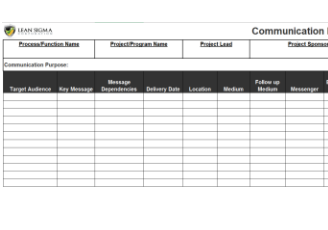
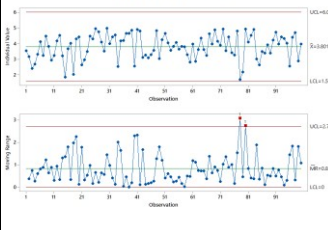
PHASE	ACTIVITIES	TOOLS
DEFINE <i>Everyone should understand the goal, projected timeline and projected benefit of the project</i>	Project Name and Purpose Complete Project Charter (Required) Develop a High-Level Process Map (Required) Identify Process Owner, Champion, Team Define Customers and Requirements (CTQ) Align Goals with Business Initiatives Determine Projected ROI	Brainstorming Project Charter Template Graphing Software/House of Quality Stakeholder's Analysis SIPOC Diagram/VOC Gathering Historical Data ROI Formulas and Cost/Benefit Analysis
MEASURE <i>Get a clear snapshot of what is happening today</i>	Detailed Process Map Collect Data Take Measurements Measure your Measurement System	Graphing Software Data Collection Plan Benchmarking, Balanced Scorecard, CTQs Histogram, Pareto Chart, Scatter Diagram Control Chart, Sigma Level, ROI, FMEA Validate, Gage R&R, Observation, Test Information multiple times
ANALYZE <i>Analyze the data to discover variation, variance, root cause and the impact of these activities on the project</i>	Define Performance Objectives Identify Value/Non-Value Determine the Root Cause Analyze Data SPC	Value-Stream, VOC/VOE/VOP/VOB Tim Woods, VSA, Historical Data 5 Whys, Fishbone, Hypothesis testing, DOE, ANOVAs Histogram, Pareto Chart, Scatter Diagram, Control Charts, Statistical Analysis
IMPROVE <i>Multipurpose phase: Choose the solution Pilot the solution Mistake proof Roll out Evaluate Result</i>	List Potential Solutions Rank Solutions Select Solution and Try Double Check Results Roll Out Evaluate and Correct	Analysis, Brainstorming Pugh (Decision) Matrix/SWOT Analysis, Capability Study, VOC/VOE Pilot, Simulation, Focus Group FMEA, VOC/VOE Execution/Deployment Plan, Project Plan Evaluation Plan, House of Quality
CONTROL <i>Verify the ROI, benefits, cost saving/ cost avoidance Implement Control and Transition Plans Close Out project</i>	Verify Benefit Document Procedures to Standardize Re-Write/Update Standard Operating Procedures or Policies Transition Plan Close Out Project and Celebrate	Sigma, ROI, Balance Scorecard, Control Chart Tips/Tricks Document, Best Practices, Control Plan Document, Control Plan Form Historical Data Transition Plan Document or Template Project Management Methods for Closing



Purpose

Key Tools

Key Outputs

<p>Define</p> <p>Everyone should understand the goal, projected time line and projected benefit of the project</p>	<p>Primary Metric</p> 	<p>Process Map</p> 	<p>Project Charter</p> 	<p>Project Plan</p> 	<ul style="list-style-type: none"> * Process Map * Gather VOC * Translate VOC to CTQ's * QFD/HOQ * COPQ * Primary & Secondary Metrics * Establish Project Charter * Stakeholder Analysis * Team Selection * Project Plan
<p>Measure</p> <p>Get a clear snapshot of what is happening today</p>	<p>C&E</p> 	<p>SIPOC</p> 	<p>FMEA</p> 	<p>Cpk</p> 	<ul style="list-style-type: none"> * Early Y=f(x) Hypothesis * Detailed Process Map * SIPOC * Cause & Effect Diagram * Cause & Effect Matrix * FMEA * Basic Statistics * Normality Test * Capability Analysis * Gage R&R
<p>Analyze</p> <p>Analyze the data to discover variation, variance, root cause and the impact of these activities on the project</p>	<p>Normality Test</p> 	<p>ANOVA</p> 	<p>2 Sample t-test</p> 	<p>Equal Variances</p> 	<ul style="list-style-type: none"> * Narrowed Y=f(x) * 1 & 2 Sample t-tests * 1 & 2 Proportions tests * Equal variance tests * Normality tests * ANOVA * Moods Median * Mann Whitney * Paired t-test * Chi-Squared test
<p>Improve</p> <p>Multipurpose phase: Choose the solution Pilot the solution Mistake proof Roll out Evaluate Result</p>	<p>Pugh Matrix</p> 	<p>Linear Regression</p> 	<p>Binary Logistic Regression</p> 	<p>DOE</p> 	<ul style="list-style-type: none"> * Refined Y=f(x) * Pugh Matrix * Correlation * Simple Linear Regression * Multiple Linear Regression * Binary Logistic Regression * Full Factorial DOE * Fractional Factorial DOE
<p>Control</p> <p>Verify the ROI, benefits, cost saving/ cost avoidance Implement Control and Transition Plans Close Out project</p>	<p>Control Plan</p> 	<p>SOP's</p> 	<p>Communication Plan</p> 	<p>SPC</p> 	<ul style="list-style-type: none"> * Control Plan * Training Plan * Refined FMEA * Communication Plan * Standard Operating Procedures * Five-S Audit * Poke Yoke * Visual Controls * Statistical Process Control