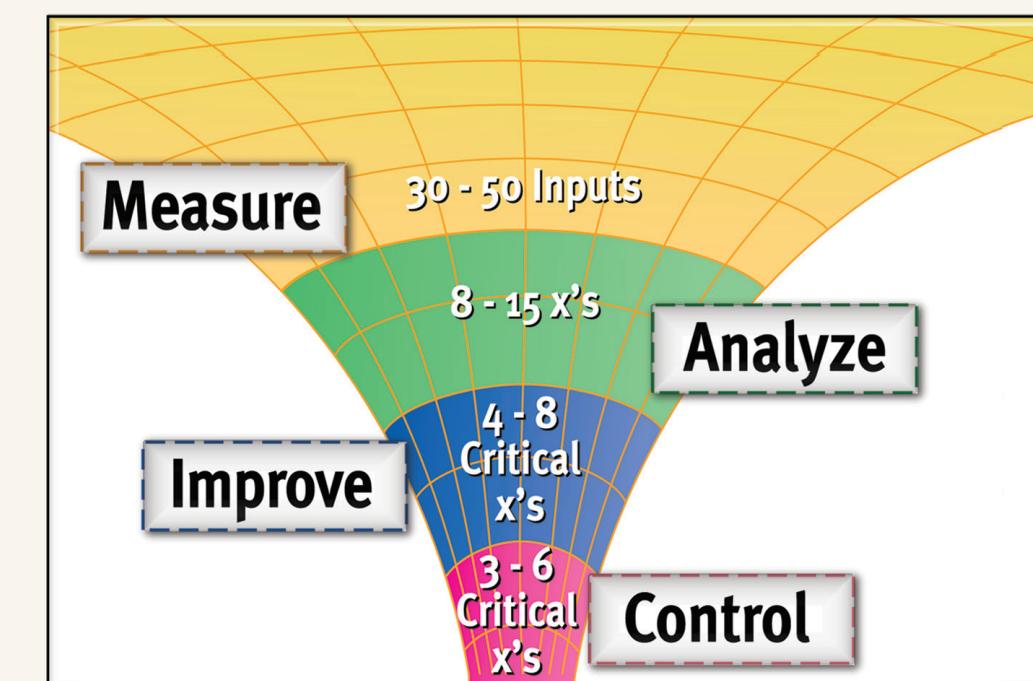


The Power of Intelligent Execution
At Lean Methods Group, we view Performance Excellence as a fundamental operating system that supports a variety of structured problem-solving methodologies. We help organizations internalize methodologies such as Lean Six Sigma to increase the capabilities of their people, and to clear the path for transforming strategic ideas into viable action plans. Through this, we deliver a total solution.

Lean Six Sigma

ROADMAP



Define the Project

Define Goal: Develop a clear project charter based on a problem that is relevant to the customer and will provide significant results to the business.

Define and Scope Problem: Requirements, Input/Output Boundary, Metrics, CTx, Cost.

Determine Project Objective and Benefits: Quality, Defect Free Product, On-time Product, Cost.

Create Project Charter: The Wheel of Change, Stakeholder Analysis, Project Charter.

Tollgate: Identify the Business Gap, Document the Project, Collect and Translate the VOC, Define Problem and Defects, Establish Preliminary Baseline and Entitlement.

Deliverables: Define and Scope Problem, Determine Project Objective and Benefits, Create Project Charter.

Tools and Techniques: SPC, CT Tree, Cost Benefit Analysis, Benchmarking, Metric Charts, Stakeholder Analysis, Communication Plan.

Baseline 'As-Is' Process

Measure Goal: Baseline the as-is process using quantitative and process mapping tools.

Define 'As-Is' Process: Flowcharts, Transportation, Waiting, Processing, Inventory, Motion.

Validate Measurement System for Process: Spaghetti Diagram - Before, R Chart by Scorer, X Chart by Scorer, Measurement System Study for Attribute Data.

Quantify Process Performance: Attribute Data in Sigma XL, State Capability Sigma, DPU, ppm, Cp, Pp, Ppk.

Tollgate: Create a Value Stream Map, Process Flow Diagram, Expose Simplification Opportunities, Run a SCORE Event (if needed).

Deliverables: Define 'As-Is' Process, Validate Measurement Systems for Outputs, Quantify Process Performance.

Tools and Techniques: Data Collection Plan, Process Flow Diagram, Value Stream Map, Spaghetti Diagram, SCORE, Measurement Systems Analysis, Check Sheets, SPC, Capability Analysis, Run Chart, Graphical Analysis, Elements of Waste, 5S.

Identify Significant Process x's

Analyze Goal: Identify the significant process x's through statistical and waste analysis.

Identify Potential Causes (x's): Fishbone Diagram, 5 Whys.

Investigate Significance of x's: FMEA, Six Step Process to Develop Standardized Work.

ID Significant Causes to Focus on $y = f(x's)$: Probability Plot of Filler 1, Hypothesis Testing Roadmap.

Tollgate: Develop a List of Potential Causes, Narrow Down List of Potential Causes, Collect Data on x's, Perform Graphical Analysis, Perform Statistical Analysis, Conduct Waste Analysis, Evaluate the Impact of the x's on y, State Preliminary Y = f(x's).

Deliverables: Identify Potential Causes (x's), Investigate Significance of x's, Identify Significant Causes to Focus on $y = f(x's)$.

Tools and Techniques: Fishbone, Process Flow Diagram, Value Stream Map, FMEA, Cause & Effect (C&E) Matrix, Root Cause Analysis, Graphical Analysis Selection Matrix, Statistical Analysis Selection Matrix (Hypothesis Testing and Regression), Takt Time, Workload Balancing, Workload Combination Chart.

Validate Solution

Improve Goal: Validate that the potential solution will result in the improvement desired and create your implementation plan.

Generate Potential Solutions: Potential Solution Matrix, Focus Statement.

Select and Test Solution: Solution, Future Process Mapping, Future Value Stream Mapping, Design of Experiments, TRIZ, Creative Thinking.

Develop Implementation Plan: Impact Matrix, 4E Matrix, 3D Cube, 5S.

Tollgate: Generate Potential Solutions, Create Baseline State VSM, Evaluate Potential Solution, State y = f(x's), Run a SCORE Event (if needed), Develop an Implementation Plan.

Deliverables: Generate Potential Solutions, Select and Test Solution, Develop an Implementation Plan.

Tools and Techniques: Future Value Stream Map, Random Walk, TRIZ, Creative Thinking Hats, Cellular Layout, SCORE, Kanban, Visual Workplace, Solution Selection Matrix, Implementation Plan, SMED, TPM, Mistake Proofing.

Sustain Improvements

Control Goal: Create a control plan, implement the full solution, and successfully transition your project to the process owner.

Create Control and Monitoring Plan: Xbar-R Chart of Sample 1, ..., Sample 5.

Implement Full Scale Solution: STOP, Preventative Maintenance, Data Location, Process Characteristics, Sample Size and Frequency, Responsible Persons, Decision Rules, Process Flow, Process Control.

Finalize Transition: Primary Metric, I and MR Chart for Cycle Time.

Tollgate: Close Project, Celebrate!

Deliverables: Create Control and Monitoring Plan, Implement Full Scale Solution, Finalize Transition.

Tools and Techniques: Mistake Proof the Process, Determine the x's to Control and Methods, Complete MSA on Critical's, Determine y = f(x's), Develop a Control and Methods Documentation, Implement Solution, Evaluate Implementation, Develop Transition Plan, Handoff to Process Owner, Capture Lessons Learned, Create Final Report/Presentation, Celebrate!