Introduction to Lean Six Sigma Optimization (LSSO)
The Burning Platform

Why do you need to change?
Some Common Burning Platforms

- Budgets too tight to perform needed tasks
- Increased product or service demands
- Long process cycle time
- Escalating costs
- Dissatisfied customers
- Employees frustrated and overworked

What causes you, your boss or customer to lose sleep?
What is Lean Six Sigma Optimization?

Lean Six Sigma Optimization (LSSO) is a structured approach for consistently listening to your customers and optimizing resources and processes to best meet the customers' needs. LSSO focuses on the elimination of waste and the minimization of variability in providing the best product or service to the customer. Decision making is based on facts, data and Optimal Thinking® while results are monitored with the best performance metrics to ensure maximum success.
Optimal Effectiveness and Efficiency

• Optimal Effectiveness:
  Working on the right thing at the right time

• Optimal Efficiency:
  Doing it right the first time

Doing the right thing right at the right time
LSSO Benefits

• Optimal Cycle Time
• Best Quality
• Lowest Cost
• Best Customer Satisfaction
LSSO History

• 1930’s : Scientific management (Industrial Engineering)
• 1950’s : Statistical process improvement methods
  (Dr. W. Edwards Deming / Bonnie Small)
• 1980’s : Total Quality System (TQS)
  Six Sigma (Motorola) (Bill Smith)
  Toyota Production System (TPS) (Taiichi Ohno )
• 1990’s : Total Quality Management (TQM)
  Lean Manufacturing (Womack and Jones)
  Business Process Reengineering (BPR) (Hammer)
  Continuous Measurable Improvement (cmi)
• 2000’s : Lean Six Sigma (LSS)
  Continuous Service Improvement
• 2009 : Lean Six Sigma Optimization (LSSO)
Systems Concept

- Each system has input, output, process and feedback
- Each system has smaller systems inside
- Each system is part of a bigger system
- Systems are inter-related

If any one of the parts is suboptimal, the whole system is suboptimal.
LSS Examples

- Federal Express: delivers overnight
- Lens Crafters: Prescription glasses in an hour
- L.L. Bean: same day shipping
- Southwest Airlines: seat assignment at gate
- Del Computers: custom PC in a week
- eBay: lean trading
- Minnesota HMO: sees patients 1 to 2 days of call
- Digital River: software purchase through download
- Delco Electronics: Synchronous workshops in 3 days
- Banking: express tellers, single line/multiple servers
- City of Ft. Wayne, IN: link LSS to city strategy, improved building permit process 47 to 12 days
Types of Optimization

Continuous

Breakthrough

Combination
LSSO Process (DMAOC)

Cycles of Optimal Learning
Some LSSO Tools

• 7 Common Quality Optimization Tools
  – Pareto Chart
  – Histogram
  – Scatter Diagram
  – Line Graph and Run Chart
  – Check Sheet
  – Control Chart
  – Cause and Effect Diagram

• Cycle Time Optimization
7 Common Quality Optimization Tools

Pareto Chart

Line Graph / Run Chart

Histogram

Check Sheet

Scatter Diagram

Control Chart

<table>
<thead>
<tr>
<th>Reason</th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wrong number</td>
<td>II</td>
<td>I</td>
<td>I</td>
<td>++++</td>
<td>++</td>
<td>20</td>
</tr>
<tr>
<td>into request</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>10</td>
</tr>
<tr>
<td>Boss</td>
<td>+++</td>
<td>II</td>
<td>+++</td>
<td>I</td>
<td>III</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>6</td>
<td>10</td>
<td>8</td>
<td>13</td>
<td>49</td>
</tr>
</tbody>
</table>

Cause and Effect Diagram
Definition

**Cycle Time Optimization (CTO)** is an operating philosophy of maximizing the efficiency of suboptimal value-added activities while minimizing non-value-added activities and time for the best quality, cost and responsiveness to customer needs.
Cycle Time Optimization Chart

Optimal Value-adding Activities

Suboptimal and Non-Value-adding Activities

Time
Some Suboptimal Examples

Case (1) : Excessive SVA Activities

Case (2) : Excessive Queue Time

Case (3) : Continuous Optimization

Case (4) : Combination
Principles in Process Optimization Design

1. Perform activities in parallel as early as possible
2. Set up common priority system
3. Minimize variability in the system
4. Minimize queue time
5. Minimize suboptimal and non-value-adding activities
6. Optimize value-adding activities
7. Minimize errors (Do it right the first time)
8. Detect errors at the source
9. Set up feedback system for timely corrective action
10. Set up optimal process-oriented performance metrics and measurement system
11. Perform best process failure mode and effect analysis
Root Cause Analysis

Areas to consider:

• People
• Process
• Equipment
• Material
• Measurement
• Environment
Cycles of Optimal Learning

Focus, learning and continuous optimization over time produces the best results.
Summary

• **Lean Six Sigma Optimization (LSSO)** comes from a long history of improvement experiences
• Key focus: customer, results, systems concept, processes, tools, facts & data, people with Optimal Thinking® as a core
• Optimization can be continuous and breakthrough
• **DMAOC: LSSO** process for cycles of learning
• Many LSSO tools: just-in-time training on projects
• Focus, learning and **continuous optimization** over time produces the best results
For more information on Lean Six Sigma optimization, please contact:

Ed Lai
310-365-0629
elai001@aol.com