What’s Next After Lean Six Sigma?

Ron Snee
Snee Associates, LLC

Roger Hoerl
GE Global Research

ASQ Lean Six Sigma Conference
Phoenix, AZ
March 8-9, 2010
The Improvement Imperative

Is a new approach needed?

Problems not solved by Lean Six Sigma

Holistic view of the business and business improvement

How problems not solved by Lean Six Sigma are addressed

Evolving to an holistic approach

Summary
Global competition and information technology have created the “Improvement Imperative”
- The need to improve around the globe to remain competitive
- We must improve all measures of performance
  - Quality(Q), Cost(C) and Delivery(D)
  - QCD is affected by all parts of the business
- A single improvement focus is helpful but is not enough
  - Reducing waste and cycle time are necessary but not sufficient
  - Reducing variation alone will not make you a winner
How Do We Know that We Need a New Approach?

Guiding theory

- *The Structure of Scientific Revolutions*
  - Thomas Kuhn (1962)
- *Discovering the Future - The Business of Paradigms*
  - Joel Barker (1985)

Paradigm – How things are done – The rules of the game
- When the rules change the game changes

You need a new approach, a new paradigm, when
- People are messing with the rules
- Existing methodology cannot solve the problems we are facing
Why Do We Need a New Approach?

- True continuous improvement culture is not developing
  - Improvement not seen as a strategic business imperative or function
  - Improvement is focused in operations and less so in other functions
  - Improvement methodology not made part of daily work
  - Improvement opportunities are not being fully realized

- Improvement efforts tend to be disjointed, rather than integrated
  - Lean Six Sigma projects managed separately
    - Not part of other improvement initiatives
  - People continue to think of Lean and Six Sigma as separate improvement approaches – many are “choosing sides”
  - Innovation is seen as something different from improvement
    - A competitor
  - Process management seen as separate from Lean Six Sigma
Why Do We Need a New Approach?

No one has yet “mastered” improvement

- Persistent assumption is there is one best method for improvement
  - Constant search for latest fad/bandwagon
- Few books or articles on improvement, per se
  - Many on improvement techniques
- Improvement initiatives and process improvements frequently aren’t sustained
- Pre-determined solutions are frequently “force fit” to problems for which they are not appropriate
  - “If all you have is a hammer, every problem looks like a nail.”
“Only the overall review of the entire business as an economic system can give real knowledge.”

Peter F. Drucker

Business is a System
• Holistic view reduces opportunity for sub-optimization
A Corporation’s Core Processes

Product Processes
- Design
- Development
- Manufacturing
- Delivery

Enterprise Processes
- Planning
- Financial
- Personnel
- Legal
- Communications
- Public Relations

Business Processes
- Selling
- Ordering
- Distribution
- Billing
- Collection
- Service

Market Processes
- Requirements Collections and Definition

Market Place

Requirements
Collections and Definition
Translation

Lean Six Sigma What's Next?
Operations Have Numerous Opportunities for Improvement

* Multiple interconnections within these units.
Holistic View of Improving the Business

A view of improvement as a process that:

- Works in all areas of the business
- Works in all cultures - common language and tool set
- Can address all measures of performance
- Addresses all aspects of process management:
  - Process Design, Improvement and Control
- Can address all types of improvement
  - Flow, variation, optimization, robustness......
- Management process for improvement exists:
  - Plans, goals, budgets, and reviews
- Focuses on developing an improvement culture
  - Uses improvement as a leadership development tool
Holistic Improvement System

An improvement system that can successfully create and sustain significant improvements of any type, in any culture for any business

- **Create and Sustain**
  - Infrastructure – management systems and resources
  - Continuous improvement culture
  - Leadership development

- **Significant improvements**
  - Quality, cost, delivery, customer satisfaction, bottom line

- **Any type**
  - Process performance measures
  - Flow, variation, optimization
  - Design, improvement, control

- **Any culture** – Function, Country, ……

- **Any business** – Manufacturing, service, non-profit, health care, government, ……
What Does Holistic Improvement Look Like?

Strategic Level
- Senior management involvement; led by Chief Improvement Officer (CIO)
- Creation of improvement culture – Part of Each Job Description
- Improvement Council (IC) is permanent part of the business planning cycles.

Managerial Level
- Rigorous, defined system for planning and implementing improvements
- Process management systems are integrated with the improvement system
- There is a defined organizational structure to support the improvement system

Operational Level
- Dynamic “core set” of proven improvement methodologies - LSS, TRIZ, Work-Out, ...  
  - Dedicated experts in core methodologies
  - All employees are trained at a basic level in all core methodologies
  - Additional “non-core” methodologies may be utilized as needed
- Employees are expected to implement improvements outside of formal projects
What Holistic Improvement Looks Like
Two Critical Elements

≡ Management System for Holistic Improvement
≡ Improvement Project Portfolio
Management System for Holistic Improvement
Process Control, Improvement and Design Integrated

Customers

Process Design/Redesign

Process Improvements

Process Improvement System

Improvement Projects

Process Adjustments

Periodic Analysis and Reviews

Feedback

Reports & Information to Management

Process Performance Data

The Process

When Needed
### Holistic Improvement Management Reviews

<table>
<thead>
<tr>
<th>Review Team</th>
<th>Review Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process Operators</td>
<td>Continuously/Daily</td>
</tr>
<tr>
<td>Process Managers and Staff</td>
<td>Weekly</td>
</tr>
<tr>
<td>Site Manager and Staff</td>
<td>Monthly</td>
</tr>
<tr>
<td>Business Manager and Staff</td>
<td>Quarterly</td>
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</tbody>
</table>

Periodic Management Review at All Levels is Essential for Effective and Sustained Improvement
Types of Commonly Encountered Improvement Needs

Product and Operating Processes

- Flow of information and materials – Process streamlining
- Product Quality
- Product Delivery – Consistency is critical to success
- Process and Product Cost Reduction
- Process Variation – Reducing Waste
- Process Control
- Process Operating Window – “Sweet Spot” – Design Space
- Process and Product Robustness

Enterprise Management Processes

- Employee development, public relations, planning, ....

Project Type Defines the Appropriate Approach and Tools
Integrated Project Management System

- Start with project selection - Identify
  - Projects that have highest value
  - Approach that should be used on each project.
- Portfolio management and project-by-project selection
- DMAIC framework to guide improvement projects
- Improvement infrastructure to manage and lead the effort
  - Champions, Master Black Belts, Black Belts and Green Belts
- Management systems guide and sustain improvement:
  - Project tracking, management review, communication, recognition and reward, etc.
- The right projects relate to:
  - Business goals
  - Process performance – where the pain is coming from
  - Improvement in flow of materials and information while reducing waste and cycle time
Improvement is a managerial process just like staffing, budgeting, auditing etc.

If you want improvement to happen on a regular and sustained basis, you must have a management system in place to guide and sustain the work.

Project portfolio contains projects of 3 types:
- Projects with known solution (e.g. capital projects)
- Product and Process Improvement projects (no known solution)
- Infrastructure - improvement initiatives like ISO 9000, new performance management system, ERP system
<table>
<thead>
<tr>
<th>Project</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase capacity of Process Z</td>
<td>Product/Process Impvt</td>
</tr>
<tr>
<td>Relocate milling process</td>
<td>Capital</td>
</tr>
<tr>
<td>Secure environmental permits</td>
<td>Infrastructure</td>
</tr>
<tr>
<td>Upgrade DCS software</td>
<td>Infrastructure</td>
</tr>
<tr>
<td>Automate packaging line</td>
<td>Capital</td>
</tr>
<tr>
<td>Increase yield of Process XX</td>
<td>Product/Process Impvt</td>
</tr>
<tr>
<td>Reduce downtime of Mixer M</td>
<td>Product/Process Impvt</td>
</tr>
<tr>
<td>Reduce manuf cost of Product P</td>
<td>Product/Process Impvt</td>
</tr>
<tr>
<td>Improve steam trap performance</td>
<td>Product/Process Impvt</td>
</tr>
<tr>
<td>Install new pump on Line K</td>
<td>Capital</td>
</tr>
<tr>
<td>Reduce Plant B reactor cycle time</td>
<td>Product/Process Impvt</td>
</tr>
</tbody>
</table>

All Projects Compete for the Same Resources
Project Selection and Management Process

Yield Studies

BB/GB Follow-Up Projects

Process Capability Studies

Bus. Leader Inputs

Hold, Reject, or More Info

Business Leader Acceptance

BB/GB Project Loading Evaluation and Assignment

Project Work

Project Review SVP – 1st Monday of Month

- Drive Project Speed
- Examine System Impact
- Instant Business Feedback
- Assess Resource Allocation
- Understand Barriers
- Opportunity to Stop a Project
- Identify Additional Projects

Lean Six Sigma What’s Next?

ASQ Lean Six Sigma Conference 2010
How Holistic Improvement Addresses Unsolved Problems

True Improvement Culture
- Improvement would be strategic and a permanent business function
- An individual is responsible for creating culture, with metrics to evaluate success
- Improvement in every job description will expand, broaden improvement efforts

Disjointed Versus Integrated Improvement Efforts
- All improvements would be under one organizational “umbrella”
- Permanent IC would manage improvements as a portfolio
- Diverse improvement types and methods would coexist and be integrated

Ability to “Master” Improvement
- Permanent infrastructure allows long-term organizational focus on improvement
- Incorporating new methodologies along with existing approaches minimizes “flavor of the month” bandwagons, and subsequent employee cynicism
- “Core set” of improvement methods allows deeper thought as to which method is likely to work best for a given problem
  - Learning and enhancement of improvement system (scientific method) results
  - Integrating improvement with process management institutionalizes improvement
How Do We Get Started?

Start Small – Think Big ..... Evolution vs. Revolution

- Migrate a LSS initiative towards Holistic Improvement
- Where a Six Sigma Leader and Quality Council exist, work to broaden their scope to improvement in general
- Integrate potentially competing improvement groups, such as ISO Certification, LSS, and Business Process Improvement
- Migrate all improvement projects to a common project portfolio.
  - All projects compete for the same pool of resources.
  - Typical project types: process improvement, capital based, and infrastructure enhancement.
  - Project selection decisions made from a common prioritized list are most effective
Start Small, Think Big ..... Evolution vs. Revolution

- Institute **data-based process management systems**
  - Begin with the most critical processes.
  - Link together process control, process improvement and process redesign.
  - Process improvement and redesign will identify improvement projects.

- Ensure **critical management systems** that enable holistic improvement
  - Recognition and reward
  - Communication
  - Management review
  - Leadership development
  - Project selection, execution and closure

- Require business units and functions to have a **continuous improvement process** in place – the business is a system.
Improvement must become a keen focus of organizations looking to compete effectively in the 21st century.

Lack of understanding of improvement objectives and needed approaches has reduced the effectiveness of utilizing Lean Six Sigma methodologies.

Holistic Improvement System uses a variety of approaches including:
- A focus on improvement of the entire business
- Careful project selection identifying the right projects and the right improvement strategy for each project
- A robust improvement methodology that can handle the wide variety of problems an organization experiences

Begin with the end in mind
- Systematically evolve to holistic improvement


For Further Information, Please Contact:

Ron Snee
Snee Associates, LLC
Ron@SneeAssociates.com

Roger Hoerl
GE Global Research
roger.hoerl@ge.com