BNL’s Competitiveness Improvement Process (CIP)

Define → Measure → Analyze → Improve → Control

Stasia Ann Scocca
May 22, 2012
Agenda

- What is CIP? Why CIP?
- BNL’s Improvement Approach
- Project Expectations and Team Roadmap
- CIP Principles
- Lean Six Sigma
- DMAIC Methodology
- Change and The People Side
What is CIP? Why CIP?

- Project to improve repetitive business processes
  - Cost and quality (efficiency and effectiveness)
  - Become and stay competitive
    - Achieve growth planned over the next decade

- Use proven methodology & tools - Lean Six Sigma (LSS)
  - Identify and reduce waste and variation
    - Maximize value and reduce cost
  - Decisions driven by data and facts
  - Involve users of the process / listen to the “voice of the customer”

- Cross-functional team-based initiative
  - Make it easier for all of us to do our work
  - Cut out “waste” and reduce variation to free up additional capacity
    - Enable us to do other important work and help the Lab grow
Alignment

Blueprint

Task Portfolio 4: Safety and Operations Excellence

WBS 4.7 Competitiveness Improvement

Cl Committee

Co-chairs:
Mike Bebon
Jim Misewich

Members:
Tom Schlagel
Lanny Bates
Gerry Stokes
Bob Lincoln
Suzanne Davidson

Milestone 4: CIP institutionalized and annual cycle established

Deliverable: CIP “Office” and annual cycle established

Expected Outcomes

• Improve the Laboratory cost competitiveness by optimizing costs and service quality using a lean six sigma approach
• Infrastructure to sustain this lean six sigma-based Laboratory-wide continuous improvement process
BNL’s Improvement Approach

- Create **Relevance** to Attract Stakeholders
- Establish **Infrastructure** to Ensure:
  - Management Sponsorship
    - Involvement via Steering Committee
  - Systematic but Pervasive Development of Skills by Internal Experts
    - Change Agents
  - Development of Appropriate Tools to Support Projects
    - Web Site, Management Tool, Standardized Reporting
  - BNL Competitiveness Improvement Process (CIP) Office
- **Align** Improvement Activities with **BNL Objectives**
  - BNL CIP Program
  - Align Each Project with **Performance Measures**
- **Accountable** and Transparent Management
- **Promote and Celebrate** Success
Improvement Cycle

- CIP operates using an annual cycle
- Institutional projects are selected during the beginning of the fiscal year
CIP Structure

CI Committee

Team

Sponsor
Leader
Team Members
Facilitator

Team

Sponsor
Leader
Team Members
Facilitator

Team

Sponsor
Leader
Team Members
Facilitator
CIP Office

Provides assistance to ensure success of sponsored improvement projects by:

- Providing training
- Facilitating and consulting with improvement teams
- Assisting with analysis
- Developing and managing necessary reporting tools
- Consolidating and communicating results
Improvement Projects

- Project Selection:
  - CIP Committee members (from senior management) submitted candidates (cross-cutting processes)
  - Processes prioritized based on risk and impact/effects on BNL

- FY10 Projects:
  - Guest Users
  - Immigration Services - Visas
  - Routine (Small) Purchasing

- FY11 Projects:
  - New -
    - Proposals Process
    - Hiring/On-boarding
    - BORE (Beneficial Occupancy Readiness Evaluation)
  - Continuation Projects -
    - Immigration Services - Green Cards
    - Guests & Visitors

- FY12 Projects:
  - New Institutional -
    - Electronic ESR
    - Integrated Operational Performance System
    - SBMS
    - Space Management
    - IFM
  - New Departmental -
    - Calibration
    - Radioactive Waste Management
  - Continuation Projects -
    - Immigration Services - Green Cards
    - Guests & Visitors – One Registration System
    - Proposals Process
    - Hiring/On-boarding
Tools

- Monthly Progress Review
  - Team Leader Meeting with Co-chairs and Sponsor
  - Standard briefing format

- SharePoint
  - General Competitiveness Improvement Project Site
  - Each Team has a Site
    - Post Announcements
    - Calendar Events
    - Documents
    - Tasks
    - Team Discussion
    - Management Tool (populates management dashboard)
    - Burdensome requirements
    - DMAIC task manager
    - Metrics
Project Expectations

- Focus on the customer(s) / user(s)
- Understand and articulate what is being improved and why
- Establish metrics to measure success
- Make decisions based on data and facts
- Be open to new ideas and approaches
- Stay within project scope
- Examine interactions (hand-offs) between departments, offices, work groups, etc.

- Show improvement / results!
CIP Team Roadmap:

- **Simplify the process**
  - Eliminate/minimize non-value added steps; i.e. **WASTE**

- **Combine steps in the process to eliminate wait time**
  - Reduce hand-offs

- **Perform steps in parallel where possible**
  - Parallel processing

- **Align hand-offs**
  - “Pull” what is needed from previous step in the process, only that triggers new actions (pull rather than push)
  - Strive for continuous flow - one complete item proceeds through various steps, without interruptions (no batching)

- **Utilize technology to enhance efficiency & effectiveness (IT)**
  - Only automate after streamlining

- **Determine impact on metrics**
  - How will success be measured?
  - What are the project results?
CIP Principles

- Reduce Lead Time
- Reduce Variation
- Connect and Empower People...

Make Improvements Through People
Lean and Six Sigma Contribution

- **Lean**
  - Lean focuses on eliminating non-value added steps and activities in a process
  - Lean makes sure we are working on the right activities
  - Lean establishes the value flow as pulled by the customer

- **Six Sigma**
  - Six Sigma focuses on reducing variation from the remaining value-added steps.
  - Six Sigma makes sure we are doing the right things right the very first time
  - Six Sigma makes the value flow smoothly without interruption

Source: Air Academy Associates
LSS Thinking – 3 Forms of Work

- Value-added

- Non value-added, but necessary (requirements, regulations & capability)

- Non value-added ("Waste")
The 8 Wastes – Non-value Added…

“DOWNTIME”
- Defects
- Over-production
- Waiting
- Non-utilized resources/talent
- Transportation
- Inventory
- Motion
- Excess processing

“TIMWOODS”
- Transportation
- Inventory
- Motion/movement
- Waiting
- Over-producing
- Over-processing
- Defects
- Skills
## Types of Waste in Processes - “TIM WOODS”

<table>
<thead>
<tr>
<th>Type of Waste</th>
<th>What is it?</th>
<th>Examples</th>
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<tbody>
<tr>
<td><strong>Transportation</strong></td>
<td>Movement of items more than required, resulting in wasted efforts and energy, and adding to cost</td>
<td>• Movement of files and documents from one location to another&lt;br&gt;• Excessive e-mail attachments&lt;br&gt;• Multiple hand-offs between people or departments</td>
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<tr>
<td><strong>Inventory</strong></td>
<td>Holding inventory (material and information) more than required</td>
<td>• Files and documents waiting to be processed&lt;br&gt;• More information collected on a form than required</td>
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<td><strong>Motion</strong></td>
<td>Movement of people that does not add value</td>
<td>• Looking for data and information&lt;br&gt;• Movement of people to and from filing cabinets, print, fax and copy machines</td>
</tr>
<tr>
<td><strong>Waiting</strong></td>
<td>Employees and customers waiting</td>
<td>• Employee waiting for a status of their visa case&lt;br&gt;• Queue of requisitions to be approved&lt;br&gt;• System downtime</td>
</tr>
<tr>
<td><strong>Over-production</strong></td>
<td>Processing too soon or more than required (amount)</td>
<td>• Information sent automatically even when not required&lt;br&gt;• Printing documents before they are required&lt;br&gt;• Processing items before they are required by the next person in the process</td>
</tr>
<tr>
<td><strong>Over-processing</strong></td>
<td>Processing more than necessary; when a simple approach would have been adequate</td>
<td>• Too many questions for a guest registration&lt;br&gt;• Same data required in number of places in an application form&lt;br&gt;• Follow-ups and costs associated with coordination&lt;br&gt;• Too many approvals&lt;br&gt;• Multiple reports</td>
</tr>
<tr>
<td><strong>Defects</strong></td>
<td>Errors, mistakes and rework</td>
<td>• Rejections of applications&lt;br&gt;• Incorrect data entry&lt;br&gt;• Incorrect date on a visitor notification form</td>
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<tr>
<td><strong>Skills (Under-utilized People)</strong></td>
<td>Employees not utilized to their potential</td>
<td>• Limited authority and responsibility&lt;br&gt;• Person on a job that does not coincide with their skill level</td>
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A Powerful Methodology: DMAIC

Define
- What is important to the customer:
  - Team
  - Develop Charter
  - Establish scope
  - Establish metrics
  - Establish goal

Measure
- How well we are doing:
  - Collect data
  - Identify current state

Analyze
- The process:
  - Analyze Data
  - Identify Root Causes

Improve
- The process gains:
  - Standardize the improvements made
  - Ensure Solution is Sustained
  - Determine future plans and responsibility for maintaining & monitoring progress

Control
- The process performance measures:
  - Prioritize root causes
  - Develop improvement plan
  - Implement actions
  - Validate the improvement
  (if improvements not effective, return to Analysis)
Behavioral Change

Lean Six Sigma Challenges Us to:

- Think Differently
- Work Differently
- Ask Questions and Challenge the Status Quo
  - “That’s the way we’ve always done it”
  - “It’s a DOE requirement”
- Make Decisions With Facts and Data
- Use New Principles, Tools and Methodologies
- Work together across the organizations

“Early-on, when culture and change compete, culture wins.”
- Tom Quan, GlaxoSmithKline
Lessons Learned – The People Side of Improvement Initiatives

- **Improvement is about people** – change comes through people, and we don’t want to make changes/ improvements that negatively impact employees.

- **Accountability** - Team members participation reflected in their performance appraisal.

- **Opportunity** - Want improvement ideas to come from both the top-down (senior mgmt.) and bottom-up (employees).
Thank you.