Gazing into the DoD Continuous Process Improvement (CPI) Crystal Ball

21 February 2006
Overview

• CPI potential

• Where have we been?

• Where are we going?

• Key CPI elements for DoD

• Near/mid-term actions
## CPI potential

<table>
<thead>
<tr>
<th>Company:</th>
<th>General Electric</th>
<th>Toyota</th>
<th>Southwest Airlines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Champion:</td>
<td>Jack Welch, CEO</td>
<td>Taiichi Ohno, CEO</td>
<td>Herb Kelleher, CEO</td>
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<tr>
<td>Results:</td>
<td>482% ROI 1996–2001</td>
<td>#2 world auto manufacturer; continues profitable; increasing market share</td>
<td>Continuous profitability and customer satisfaction</td>
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<tr>
<td>Main CPI Tools:</td>
<td>Six Sigma, Just In Time</td>
<td>TPS(^b)</td>
<td>Lean, Value Chain, Just In Time</td>
</tr>
<tr>
<td>Metrics:</td>
<td>Market share, ROI, employee performance</td>
<td>Business decisions driven by its philosophies</td>
<td>Cost/seat mile, employee/customer satisfaction, profit</td>
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</tbody>
</table>

\(^a\) Investment data for CPI improvements not generally available.  
\(^b\) Toyota Production System.
Where have we been? Part I

• Completed broad-based, multi-functional assessment of selected weapon systems implementing CPI initiatives
  – Air Force F-15 aircraft
  – Navy F/A-18 aircraft
  – Army HMMWVs and H-60 helicopters
  – USMC HMMWVs and other tactical vehicles (BIC & MCB)

• Results
  – Identified many successful CPI “Islands of Excellence” within DoD
  – Determined overall CPI strengths, opportunities, and impediments
  – Suggested need for alignment/convergence on key CPI elements for “step change” improvements

• Final report in work
Leverage Points

There are leverage points within weapon system value streams that drive overall materiel readiness.

Leverage point: the points at which attention and/or application of resources would result in tangible improvements/benefits to the entire end-to-end materiel readiness value stream.
Key CPI Leverage Points

- **Alignment**
- **Cycle Time**
- **Cost**

**Current Status** (As-Is)

**CPI “Islands of Excellence”**

**Benefit**

- Required Readiness at Best Value
- Fully Integrated CPI

**CPI Progress**
Leverage points – key observations

• **Cost**
  - Actively managing material cost, but labor costs associated with repairs is not explicitly managed
  - Confuse cost with price
  - Difficulty in tracking / tying investments to readiness impact / improvements

• **Cycle Time**
  - Cycle Time cannot be optimized in isolation
  - Performance not monitored nor tracked by end-to-end value stream
  - Supply chain not tightly synchronized with expeditionary/deployment demand

• **Reliability**
  - Limited understanding / focus on reliability exists – needs to be expanded, institutionalized, funded, and supported with better data collected at lowest repair levels
  - Reliability improvement efforts are limited by lack of actionable data and by limited knowledge-base of reliability principles and best practices

• **Alignment**
  - No evidence of alignment of outcome metrics up and down the value stream
  - Metrics not tracked consistently
  - Local optimization vice value stream optimization
  - Opportunities are far greater than currently understood (due to lack of data), to increase reliability, improve cycle time and understand costs
Where have we been? Part II

- Defense Logistics Board directed CPI Thought Leader group be convened
  - Providing guidance/leadership for integration

- Drafted CPI Transformation Guidebook
  - Publication anticipated after DoD Thought Leader input
  - Includes high-level OSD CPI implementation plan

- Military Services/Defense Agencies moving out with formal CPI implementation efforts
Where are we going?

**CPI “Islands of Excellence”**
- Broad-based, structured CPI methodology
- Focus upon aligned, war-fighter focused outcome metrics

**DoD CPI**
- Common CPI project identification, tracking, and management
- Convergence upon terminology, training, and CPI certification

**Military Service and Defense Agency CPI implementations**

**Thought Leader oversight and direction**

**DoD CPI “Step Change” Success**
Key CPI elements for DoD

- CPI deployment cycle
- Key roles and responsibilities
- Other program facets
CPI Deployment Cycle

**PLANNING**

1. **Develop Mission, Vision & Strategic Plan**
   - Who am I?
   - Where am I going?
   - What do I need to get done?

2. **Conduct a Value Stream Analysis**
   - How will I get there?

**IMPLEMENTATION**

- **A. Create & Refine Operational Plan**
  (What’s my plan?)

- **B. Implement Operational Plan**
  (Meet my commitment)

- **C. Monitor**
  (How am I doing?)

- **D. Focus on continuous process improvement**
  (How can I do it again? How can I do it better? How can I kill it?)

**RE-ENTRY**

**4. Goal Alignment & Deployment**
- How will I get people to do it?

**3. Develop Structure/Behavior**
- What will I need?
Key CPI Roles Within DoD

- **Champions** lead CPI within organizations and drive mission, vision, and strategic plan
  - Provide resources to the Steering Committees, CPI Support Teams, and Work Groups, monitoring the implementation of CPI across the organization

- **Steering Committees** create and share the vision, and acknowledge its importance to the organization’s success
  - Develop strategies for organizational success, define operational plans and metrics, monitor performance and provide coaching as necessary

- **CPI Support Teams** assist in the assessment of the current situation to determine variations from the organization’s standards and drive CPI project accomplishment
  - Assists the Steering Committee in creating and implementing plans to improve performance

- **Work Groups** analyze the current situation, seeking ways to improve operations
  - Use know-how and experience of individual members and consult, as necessary, with peer groups to discover improved processes. As better ways to perform work are identified and implemented, the Work Groups assist in training and developing other members of the workforce
Other program facets

• CPI workforce is not mandated as a career force

• Reliability, cycle time, and cost emphasized in alignment of outcome focused goals and metrics – focus is on outcome of CPI against expectations

• Project identification, tracking and alignment key to integrated and most effective results

• Initial CPI maturity assessment framework (Guidebook) is baseline for CPI convergence

• Primary focus is on optimizing value stream operations
Way Ahead

• Goal:
  – Strategic approach to achieve and sustain optimal end-to-end readiness to support the warfighter

• Near-term actions:
  – Lead Military Services and Defense Agencies to converge on standard DoD CPI framework
  – Use DoD CPI Transformation Guidebook as baseline
  – Align goals and metrics throughout DoD value streams
  – Focus on outcomes in relation to goals (results vs expectations)

• Mid-term actions:
  – Establish DoD CPI policy
  – Aggressively implement CPI initiatives and track benefits
  – Link CPI activities with QDR recommendations
    • QDR recommends aggressive CPI implementation