CMMI™ Transition in a Commercial Environment

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2nd CMMI™ Technology Conference and User Group
Hyatt Regency Denver Technical Center
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Denver, Colorado
Reasons to Improve...

- Decreased Defect Levels:
  Relative Defects After Release

- Decreased Cost of Poor Quality:
  Relative % of Development Effort

- Decreased Cycle Time:
  Relative Cycle Time

- Increased Productivity:
  Relative Productivity (X)

Relationships based upon data from the President’s Council on Quality
Motorola Quality Renewal

- Leadership
- COQ/COPQ
- Six Sigma
- Process Maturity
Why it will work…

• Process-based culture
• SEI SW-CMM$^\text{SM}$ experience
• Results measures
Evidence that CMMI works…

- Worldwide System Development Division (WSD) Baseline Pilot (January 2001)
  - SEI-led training
  - Selection of Disciplines/Models, Representation
    - SW / SE / IPPD
    - Continuous
    - Target Profile (All PA’s, CL3)
  - SCAMPI preparation (Practice Implementation Indicators)
  - SCAMPI On-site process

- Results
  - Effort to hold a SCAMPI understood better (still too long)
  - All levels of staff impressed and satisfied with the comprehensive results
Another reason to improve...

Trends in the Community Maturity Profile

Source: SEI Web Site, SEMA Report for August 2002

State of Practice

Motorola GSG

Based on a cumulative view of the most recent assessments of organizations up through the year indicated. This accounts for the difference from the figures on page 10.

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Global Software Group Locations

Transitioning to CMMI

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## GSG Performance Results

<table>
<thead>
<tr>
<th>Attribute</th>
<th>1993</th>
<th>1995</th>
<th>2001</th>
<th>Industry Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivered Quality Level</td>
<td>5.1σ</td>
<td>5.7σ</td>
<td>6σ</td>
<td>4.3σ</td>
</tr>
<tr>
<td>Cost of Poor Quality</td>
<td>35%</td>
<td>17%</td>
<td>5%</td>
<td>40% (underreported)</td>
</tr>
<tr>
<td>Relative Productivity</td>
<td>1.5X</td>
<td>2.2X</td>
<td>2.6-6X</td>
<td>1X</td>
</tr>
<tr>
<td>Cycle Time Improvement</td>
<td>2.75X</td>
<td>4.4X</td>
<td>6X+</td>
<td>N/A</td>
</tr>
</tbody>
</table>

* As of January, 2001, 76% of GSG’s population was at SEI Level 5 and 11% was at Level 4, vs. ~10% industry total SEI Level 4 & 5’s.
Elements of Successful CPI

• Use models of good practice
• Support mechanisms for improvement
  – Management support
  – Training
  – Metrics and verification
• Continuously repeat the cycle of change:
  – Assessment to the model to detail current state
  – Identify improvements to make
  – Pilot the improvements
  – Measure to evaluate impact of changes
  – Deploy the changes
  – Repeat
Achieve a Balanced Focus in All Areas

- **People**
- **Process**
- **Technology**
- **Business**
- **Suppliers**
- **Customers**

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Motorola GSG CMMI Activities

• GSG-India (MIEL) Early Adoptor (2001/2002)
  – Training / Target Profile / Gap Analysis
  – Process revision
  – Class B Appraisal (Continuous, SW/SE)
  – Methodology Manager asset integration

• Other GSG Transitioning Centers (2002)
  – Training / Target Profile / Gap Analysis
  – Process revision, collaboration

• Transition Workshop Meetings (2002)
  – Focus on sharing, reuse and collaboration

• Appraisals (2003)
GSG-India

• Consultant-led SCAMPI B Appraisal(s)

• Process enactment tool

• Collaboration / reuse

• Roll-out in TeamPlay

• SCAMPI A in 2003
Motorola Software Quality Council

• Sets Goals, Collaborates, Communicates
  – Participation / representation from all businesses
  – Address People, Process and Technology issues

• Manages SW-CMM Assessments
  – CAF-Compliant “Motorola Software Assessment”
    – Assessor training and development
  – ISO and Standards Alignment

• Supports CMMI Transition
  – Training
  – CMMI Working Group
Risks

• SCAMPI effort and duration remains high
  – Needs to be as effective… more efficient
  – Better the second time around
  – Promise of SEI SCAMPI B & C methods

• Over-dependence on “formal” appraisal
  – Certify the business value

• Rigid use of the “staged” mentality
  – The temptation of “process for process”
  – Doing it all “to be safe”
Learnings

• Training and experience are most important
  – Learn to interpret and use the model(s)

• Potential for SCAMPI B to be “the workhorse”
  – Motorola “formal” and “informal”
  – Use SCAMPI A where required, and to calibrate
  – Reusable appraisal artifacts

• Collect data for results and returns measures
  – Do it “this time”

• Enactment tools for process and appraisals
Next Steps

• Fan-out to other engineering disciplines
• Continue to focus CMMI-related Training
  – Increase the number of internal trainers
  – SES 2003
• Grow CMMI Lead Appraisers
  – Increase the number of experienced, internal lead appraisers
    • Opportunity to have “the right amount”
• Leverage SCAMPI method project
  – SEI pilots and internal B and C appraisals in 2003
  – Collaborate with industry partners