CMMI℠ Transition in a Commercial Environment

Larry McCarthy
Motorola CMMI Working Group

2nd CMMI℠ Technology Conference and User Group
Hyatt Regency Denver Technical Center
November 11-14, 2002
Denver, Colorado

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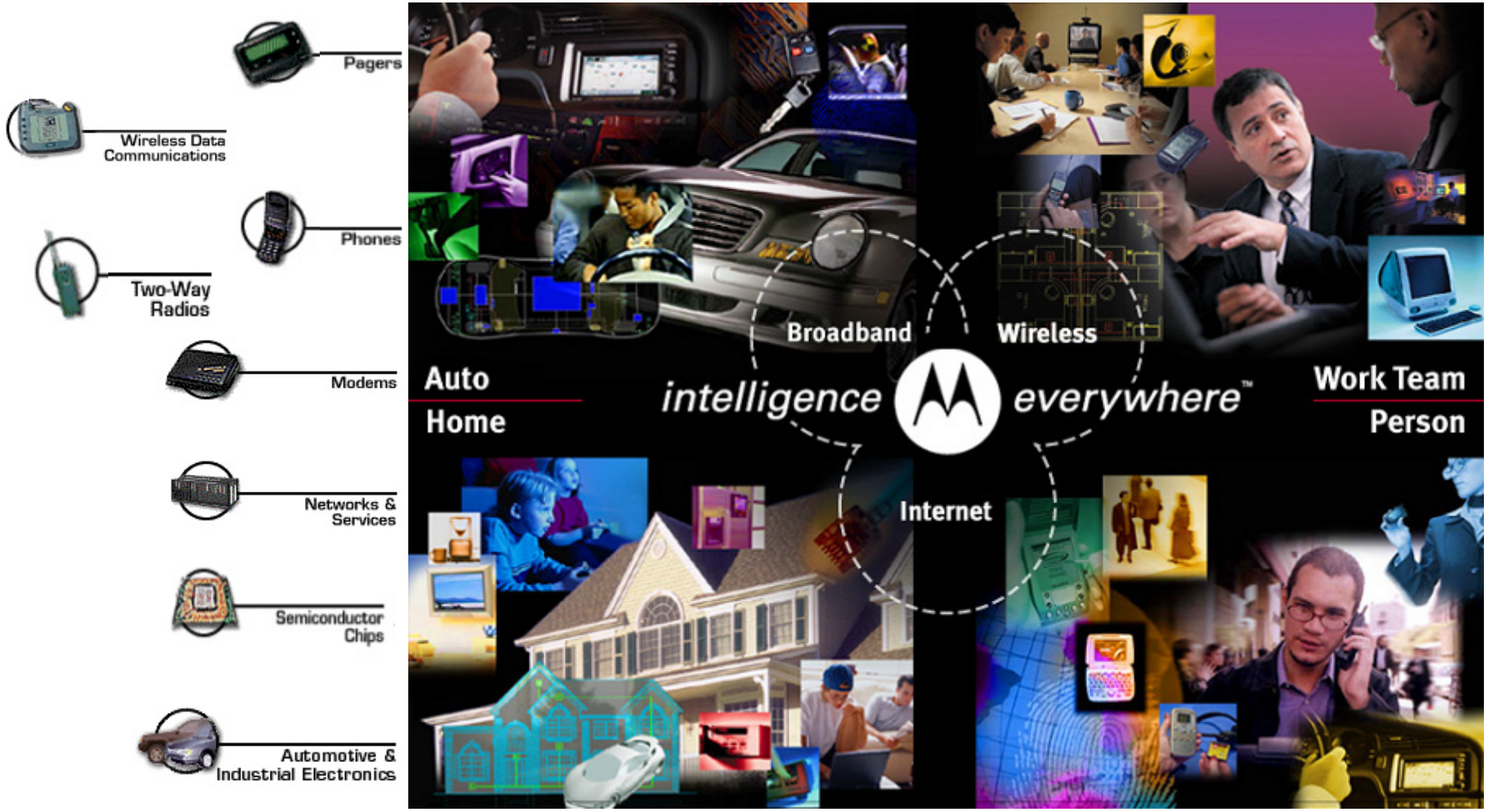

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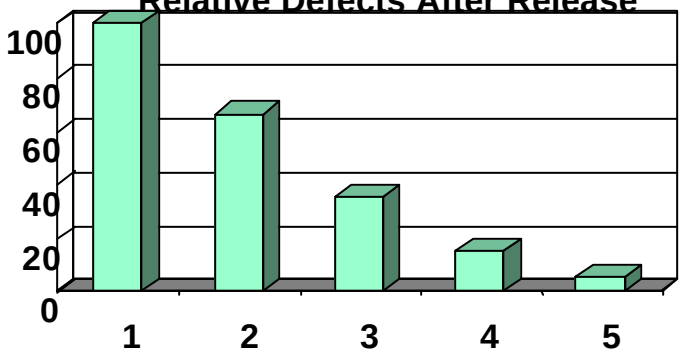
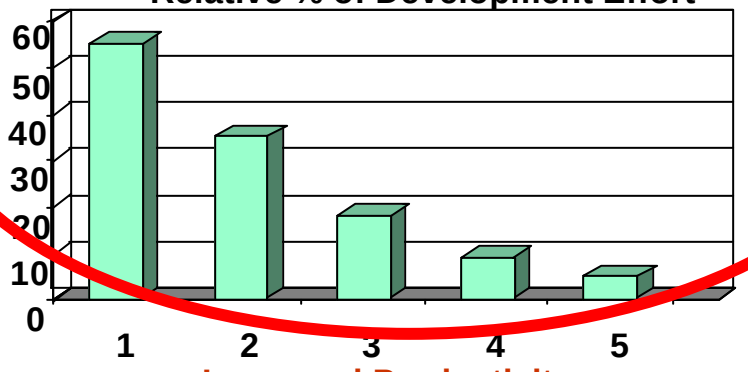
Reasons to Improve…

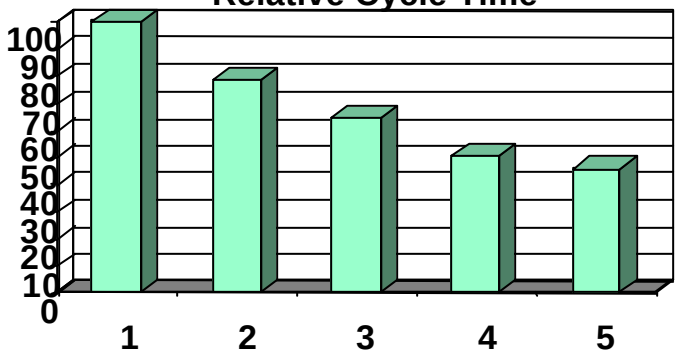
Decreased Defect Levels:
Relative Defects After Release



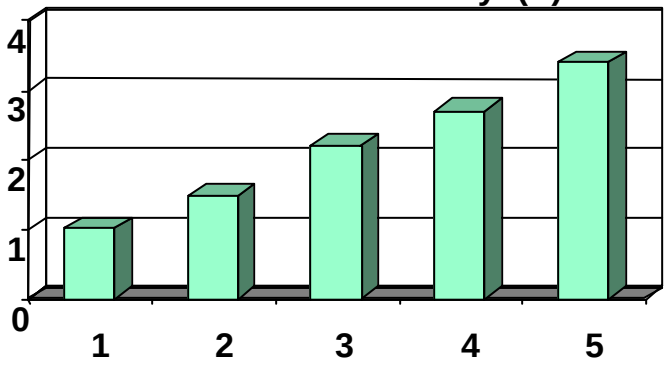
Decreased Cost of Poor Quality:
Relative % of Development Effort



Decreased Cycle Time:
Relative Cycle Time



Increased Productivity:
Relative Productivity (X)



Relationships based upon data from the President's Council on Quality

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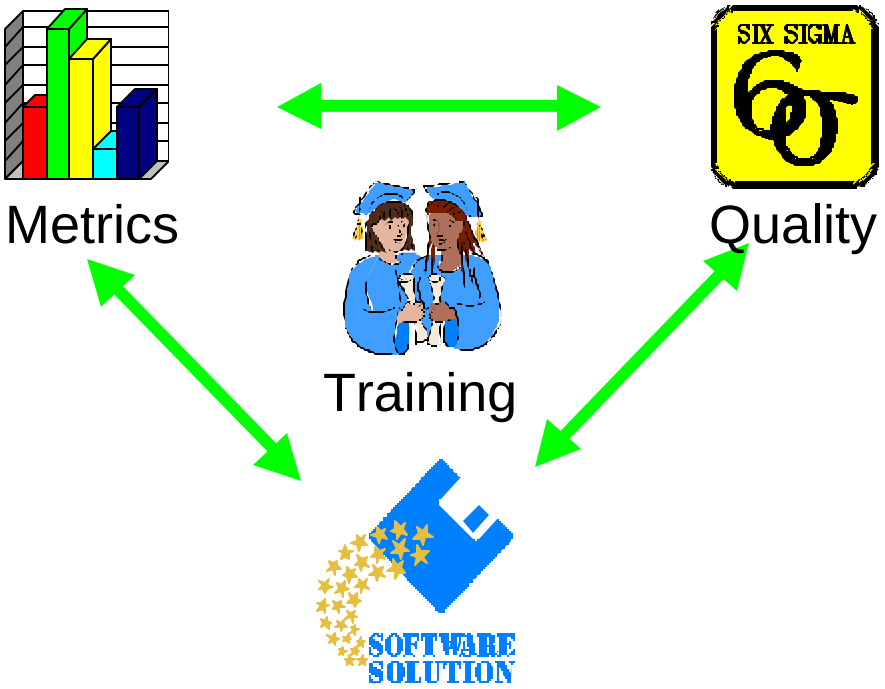
Motorola Quality Renewal

- Leadership
- COQ/COPQ
- Six Sigma
- Process Maturity



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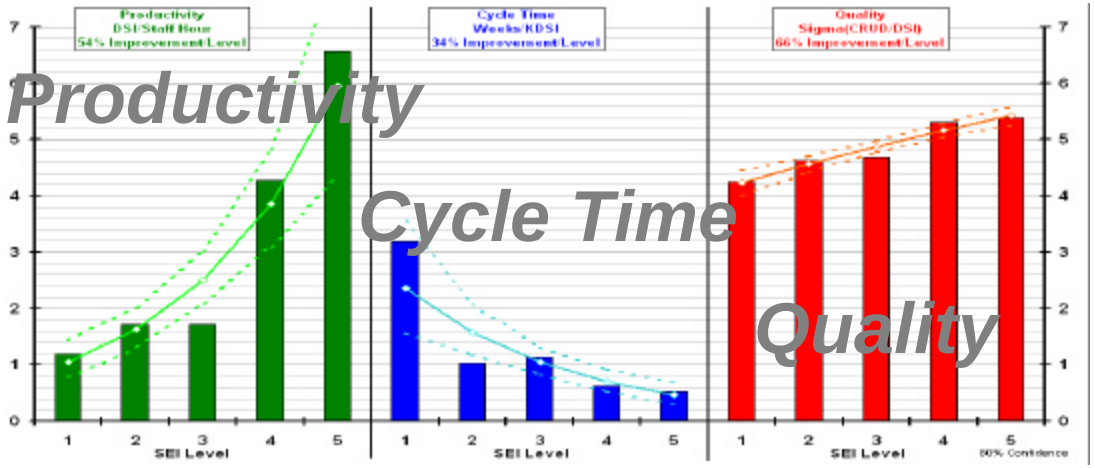
Why it will work…

- Process-based culture
- SEI SW-CMM[SM] experience
- Results measures



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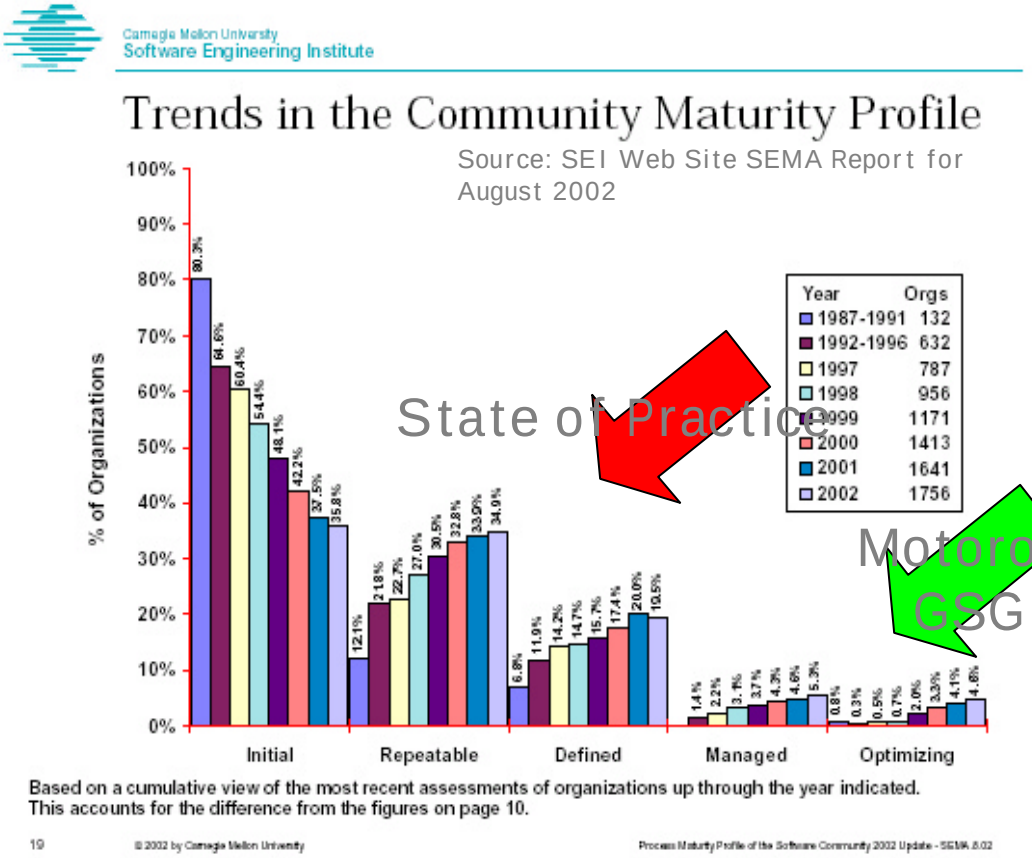
Evidence that CMMI works…

- 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…



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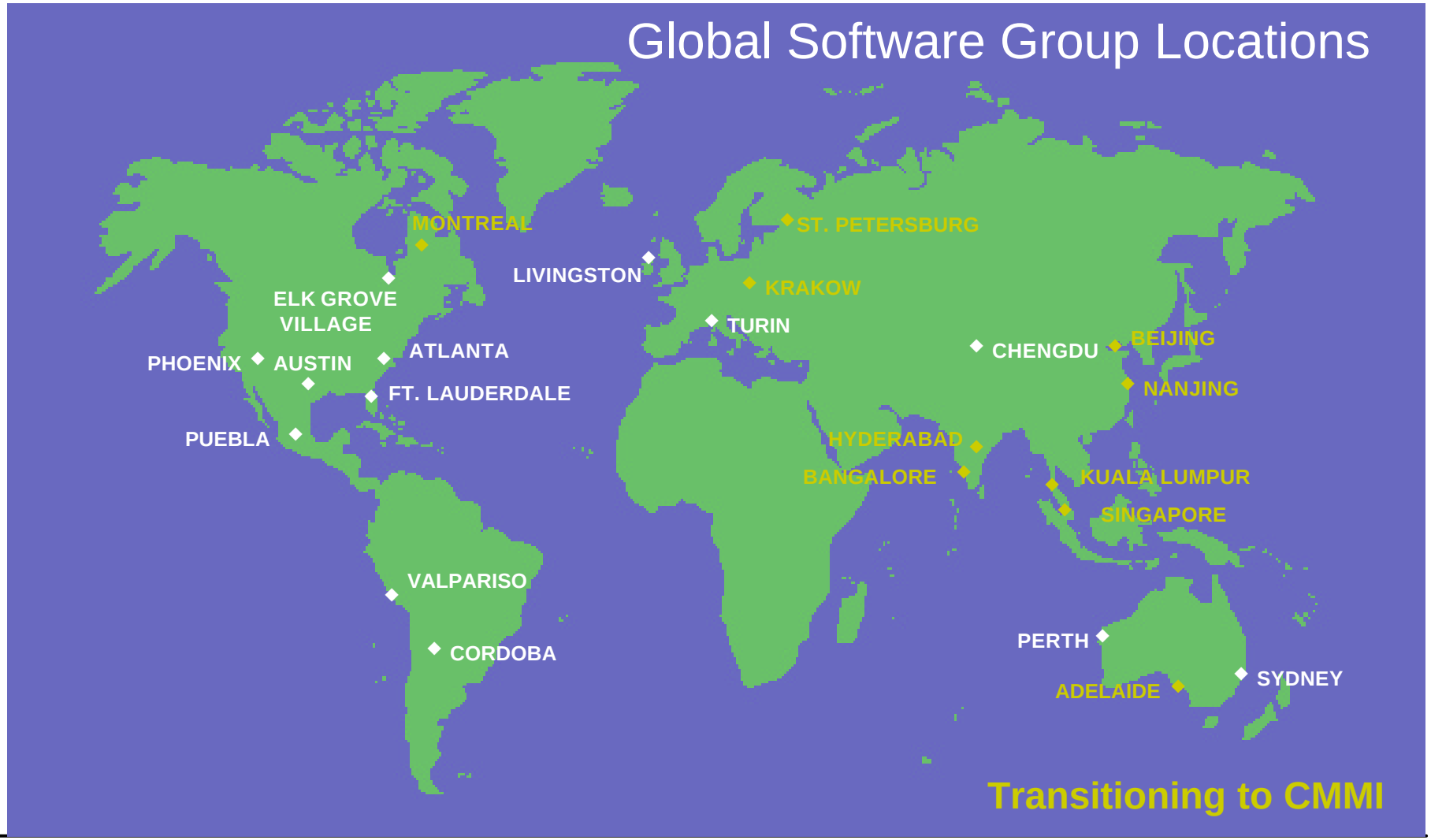
Global Software Group Locations



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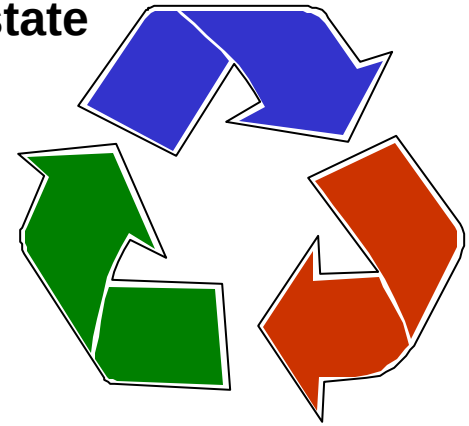
GSG Performance Results

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

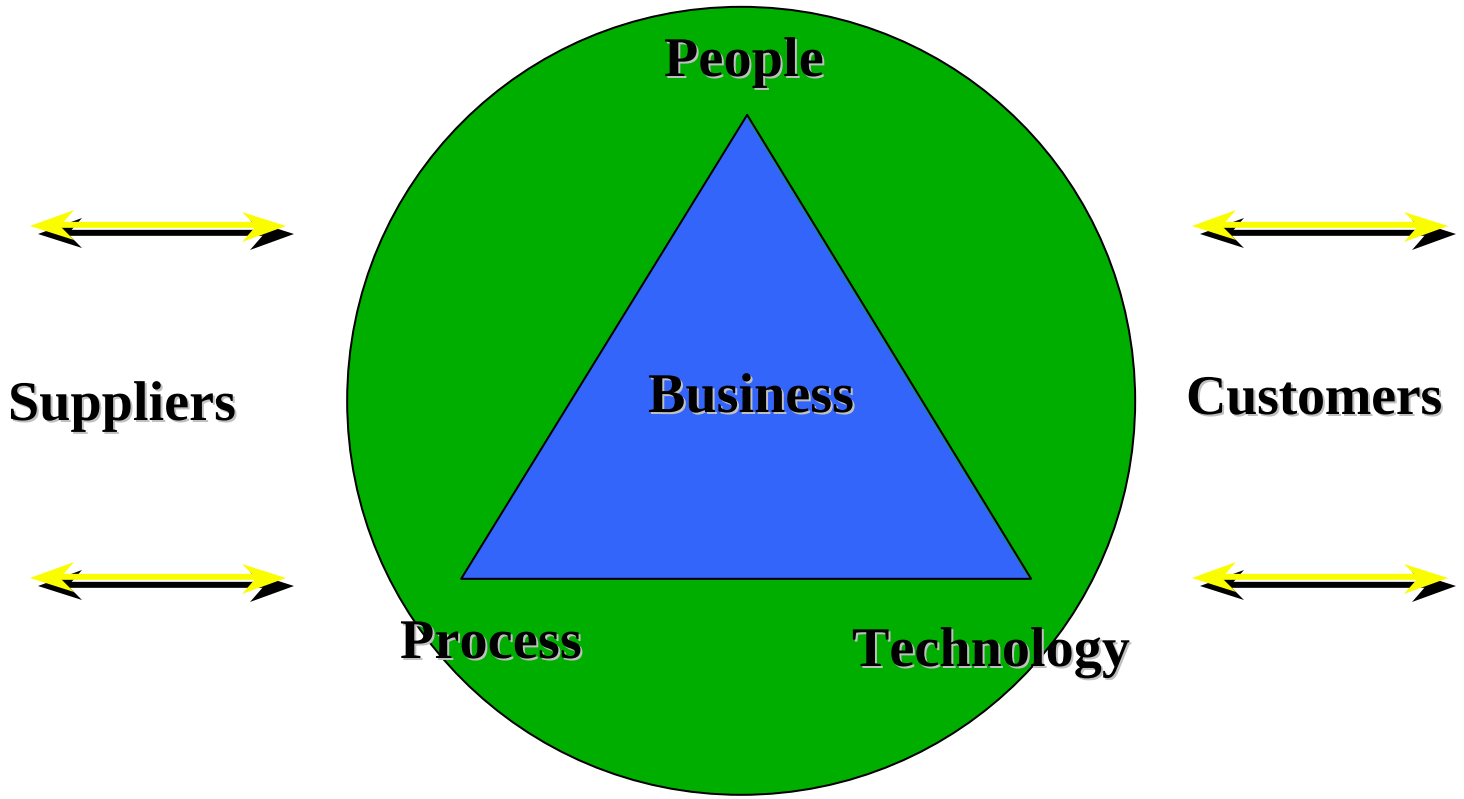
* As of January, 2001, 76% of GSG's population was at SEI Level 5 and 11% was at Level 4, vs. ~10% industry total SEI Level 4 & 5's.

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



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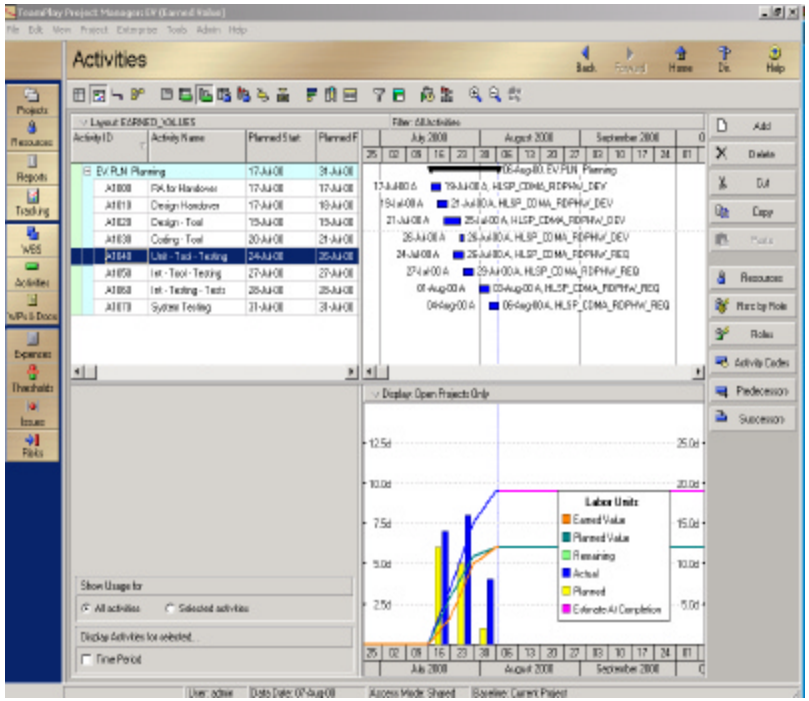
Motorola GSG CMMI Activities

- **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**



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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

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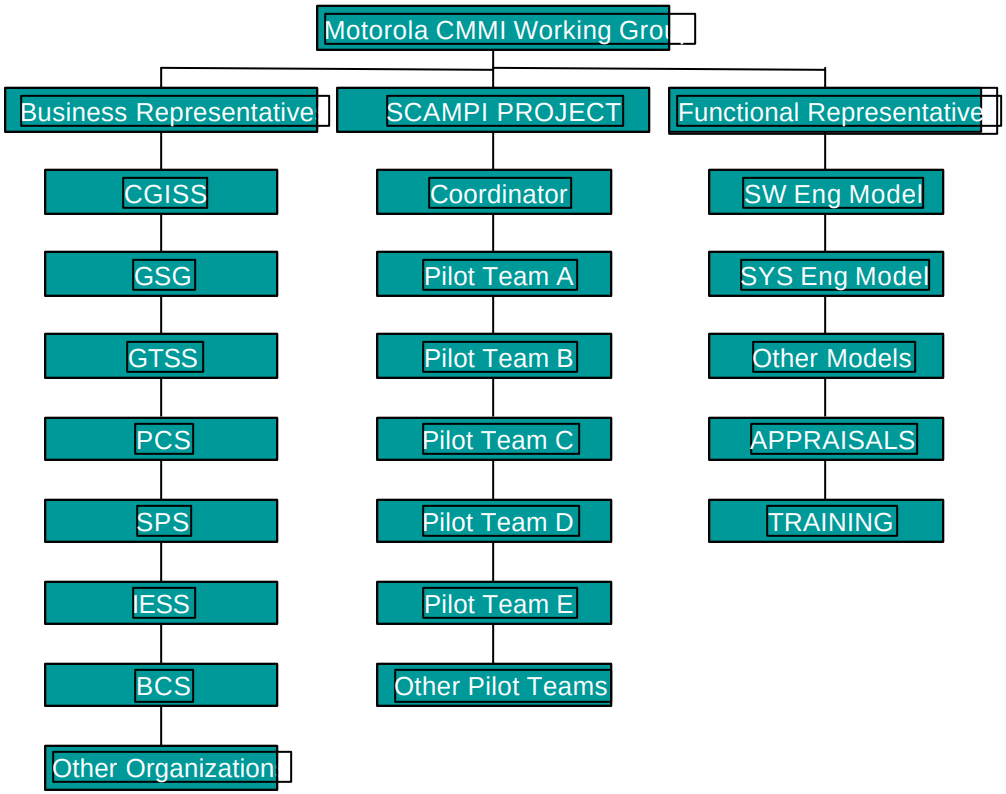
CMMI Working Group



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Risks

- SCAMPI effort and duration remains high
  - **Needs to 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**