Experiences with Focused SCAMPI^sm at NASA

SEPG 2004

Enterprise Process Improvement:

Better Products, Dependable Services, Cultures of Excellence

8-11 March

Agenda

- **The Continuous Representation & Focused Appraisals**

- **Reasons for Continuous SCAMPIs**

- **Experience with reduced Process Area SCAMPIs**

- **Some metrics on preparing and conducting continuous SCAMPIs**

- **Special considerations for capability level 3**

- **General Recommendations**
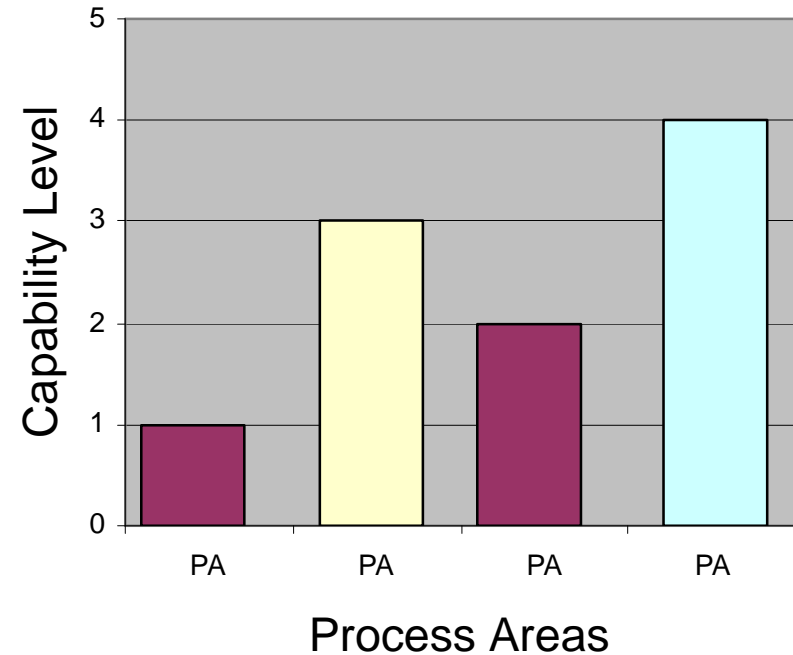
CMMI? Model – Two Representations

STAGED

Provides pre-defined roadmap for *organizational improvement*, **based on** *proven grouping* **of processes and associated organizational relationships**

Structured by Maturity Levels
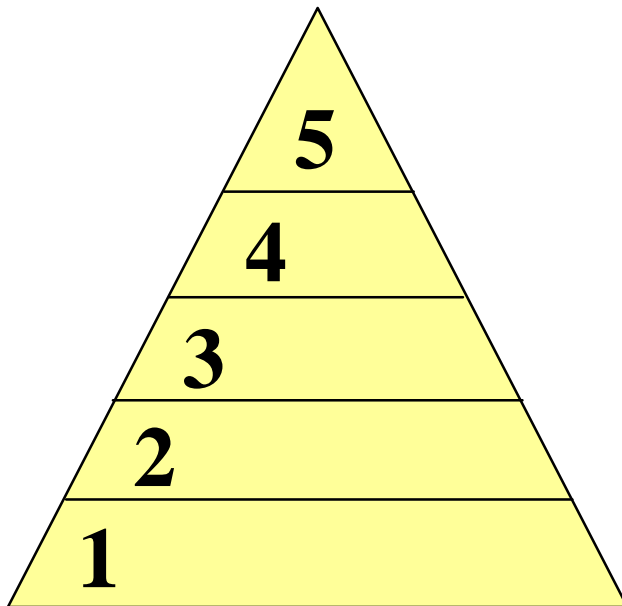
Maturity Level

Process Areas

CONTINUOUS

Provides *flexibility* **for organizations to choose** *which processes* **to emphasize for improvement, as well as** *how much* **to improve each process**

Structured by Categories of Process Areas

CMMI? Improvement Levels

Continuously Improving Process

Predictable Process

Standard Consistent Process

Disciplined Process

Performed Process

Fragmented Process

| Optimizing (5) |
| Quantitatively Managed (4) |
| Defined (3) |
| Managed (2) |
| Initial (1) / Performed (1) |
| Not Performed (0) |

5 Maturity levels in the **Staged** Representation

Measures the **Organization's** Process Maturity

6 Capability levels in the **Continuous** Representation

Measures each **Process Area's** Capability

Reasons for Continuous SCAMPIs

- **Allows focus on process areas that are important to organization**
- **Allows quicker scheduling of first appraisal**
  - **Less elapsed time from start of process improvement program**
  - **Organization becomes appraisal "savvy" earlier**
    - Reduces waste effort in future appraisals
    - Helps focus prioritization of "fixes"
    - Makes future appraisals "relatively cheaper"
- **Provides "proof" to management that progress is being made**
  - **Target capability level 1 for rapid success**
  - **Add capability level 2 to continue organization culture change**

Experience with Continuous Appraisals

- **Have performed five continuous SCAMPIs**
  - **Three PAs, 1 instantiation, target CL3 – OPF, OPD, OT**
  - **Seven PAs, 4 instantiations, target CL3 (ML2 equivalent) – RM, PP, PMC, SAM, MA, CM, PPQA**
  - **Twenty Two PAs, 4 instantiations, target CL3 (ML5 equivalent) – all PAs in SE/SW (not a NASA organization – added for comparison)**
  - **One PA, 3 instantiations, target CL3 – PPQA**
  - **Seven PAs, 1 instantiation, target CL2 (ML2 equivalent) - RM, PP, PMC, SAM, MA, CM, PPQA**

- **Have performed eleven continuous Class B – type appraisals**
  - **Most all were seven PAs – RM, PP, PMC, SAM, MA, CM, PPQA**
  - **Some deleted SAM and MA**
  - **Some added engineering process areas – RD, VER**

  Have performed dozens of Class C – type quick look appraisals
  - **Mostly seven or less PAs in various combinations**

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Appraisal Metrics 1

- The equivalent ML5 appraisal against the SE/SW model, 4 instantiations
  - Planning/Coordination/Reporting – 2 days
  - Appraisal Team Training – 2 days (included 1 day readiness review)
  - 1st Readiness Review – 6 days (1 day combined with above)
  - 2nd Readiness Review – 2 days
  - Appraisal – 7 days (two mini-teams of three people each led by two Lead Appraisers)

Appraisal Metrics 2

The equivalent ML2 appraisal against the SE/SW model, 1 instantiation (the successful organization)

- Planning/Coordination/Reporting – 2 days
- Appraisal Team Training – 2 days (included 1 day readiness review)
- Consulting/PI support – 20 days
- Readiness Review – 2 days
- Appraisal – 5 days (one team of five people with two Lead Appraisers)

The equivalent ML2 appraisal against the SE/SW model, 4 instantiations (the other organization)

- Planning/Coordination/Reporting – 2 days
- Appraisal Team Training – 2 days (included 1 day readiness review)
- Consulting/PI support – 2 days
- Readiness Review – 2 days
- Appraisal – 5 days (one team of five people with two Lead Appraisers)

Appraisal Metrics 3

The appraisal against the PPQA process area
- Planning/Coordination/Reporting – 2 days
- Appraisal Team Training – 2 days (included 1 day readiness review)
- Consulting/PI support – 2 days (1 day combined with above)
- 1st Readiness Review – 1 day
- 2nd Readiness Review – 1 day
- Appraisal – 3 days (one team of five people with two Lead Appraisers)

- **Capability Level 3 requires satisfaction of Generic Goal 3 in addition to Generic Goal 2**

- **GG3 - Institutionalize a Defined process**
- **GP 3.1 : Establish a Defined Process**
  - **Establish and maintain the description of a defined process**

- **GP 3.2: Collect Improvement Information**
  - **Collect work products, measures, measurement results, and improvement information derived from planning and performing the *process* to support the future use and improvement of the organization's processes and process assets**

Specific Appraisal Preparation Recommendations
A Notional Schedule

- **Week 1**
  - **Pick pilot projects**
  - **Pick organizational appraisal team members**
- **Week 2**
  - **Conduct Appraisal Team Training (include a project representative)**
    - Appraisal Methodology
    - Process Implementation Indicator Descriptions
- **Weeks 2-5**
  - **Prepare PIIDs**
  - **Get expert help for people preparing PIIDs**
    - Additional Appraisal Team Training using real PIIDs
  - **Conduct readiness review**
- **Week 6 - Conduct appraisal**

- **Spend some time assimilating the results**

General Recommendations

- **Start Small**
  - **Focus your process improvement energy on a small group to start**
  - **Pick a part of your organization that is**
    - Relatively coherent in team structure
    - Motivated (or at least willing) to be a pilot project
- **Start Slow**
  - **Don't go for Maturity Level 3 right away**
  - **Pick reasonable goals that are reasonably reached quickly**
    - Use continuous representation to focus on problem process areas and target capability level 2
    - Consider the organizational infrastructure process areas early (OPF, OPD, OT) for capability level 3
    - Don't plan to skip Maturity Level 2, there's benefit in celebrating early success
- **Start Simple**
  - **Avoid the temptation to write a process for every Process Area**
  - **Keep new process documentation at the "expert level", add detail only when needed for clarification**

Summary

- **The continuous representation provides an opportunity for organizations to achieve demonstrable success earlier than otherwise possible with the staged representation**

- **Continuous appraisal effort is relatively proportional to the number of process areas examined and the number of instantiations**

- **Overhead effort associated with the SCAMPI methodology tends to swamp the total effort for small scope SCAMPIs**
  - **Planning/Coordinating/Reporting   (Appraisal Input/Plan/Records)**
  - **Minimum 2 days Appraisal Team Training**
  - **Minimum of 1 readiness review (duration unspecified)**
  - **Appraisal activities**
    - Appraisal Participants Briefing
    - Validation of findings
    - Final Findings Presentation

Questions?

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