Lead Appraiser v1.2 Training

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Purpose

The purpose of this talk is to provide an overview of important appraisal concepts.

Topics

Appraisal Requirements for CMMI

SCAMPI^{SM} Appraisal Methods

Fundamental Concepts

Becoming a Lead Appraiser or Team Leader

Appraisal Requirements for CMMI

The Appraisal Requirements for CMMI (ARC) defines the requirements considered essential to appraisal methods intended for use with CMMI models:

- based on appraisal principles common to source methods
- defines three classes of appraisal methods that reflect common usage modes of appraisal methods

ARC requirements are allocated to each method class to align with usage mode characteristics.

ARC Appraisal Principles

Start with an appraisal reference model (e.g., CMMI for Development).

Use a formalized appraisal process (e.g., SCAMPI A).

Involve senior management as the appraisal sponsor.

Focus the appraisal on the sponsor's business objectives.

Observe strict confidentiality and non-attribution of data.

Approach the appraisal collaboratively.

Focus on follow-on and decision-making activities by producing actionable appraisal results.

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SCAMPI Family: 3 Classes of Appraisal Methods

SCAMPI C provides a wide range of options, including characterization of planned approaches to process implementation according to a scale defined by the user.

SCAMPI B provides options in model scope and organizational scope, but characterization of practices is fixed to one scale and is performed on implemented practices.

SCAMPI A Is the most rigorous method, and is the only method that can result in ratings.

breadth of tailoring

C

B

A

depth of investigation
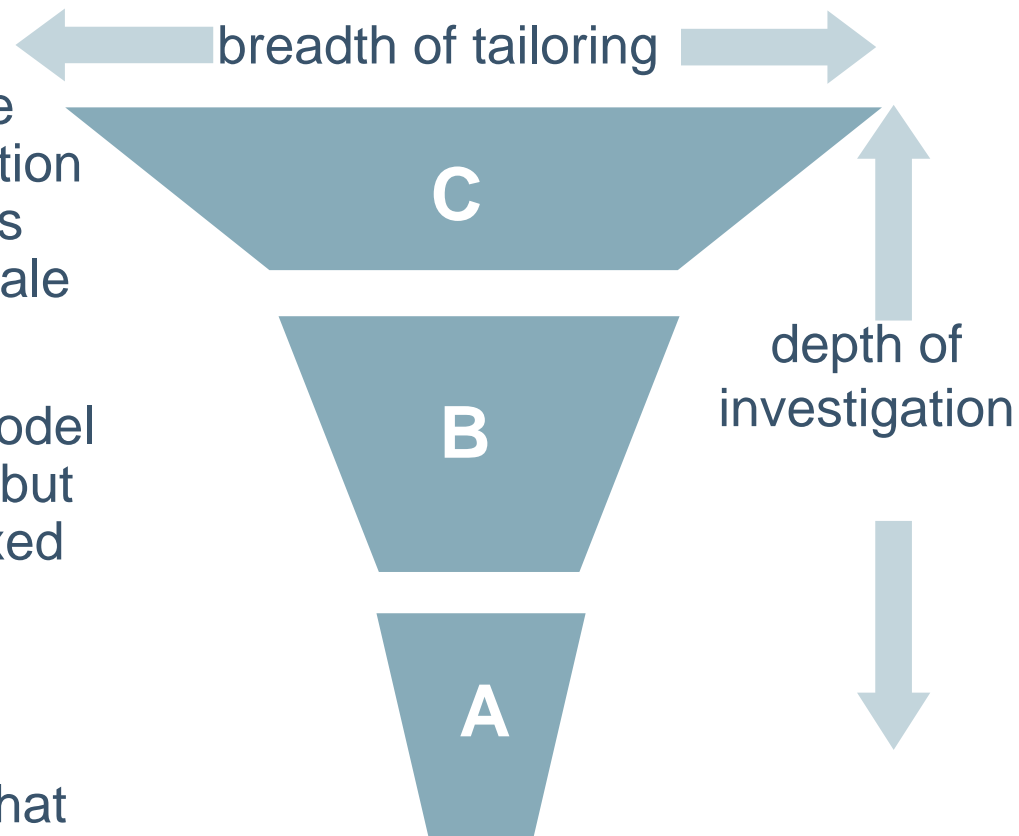
Differentiating Attributes For Appraisals

The three key differentiating attributes for appraisal classes are:

- degree of confidence in the appraisal outcomes

- generation of ratings

- appraisal cost and duration

SCAMPI Requirements

Requirement	SCAMPI A	SCAMPI B	SCAMPI C
Types of Objective Evidence Gathered	Documents and interviews	Documents and interviews	Documents or interviews
Ratings Generated	Goal ratings required	No ratings allowed	No ratings allowed
Organizational Unit Coverage	Required	Not required	Not required
Minimum Team Size	4	2	1
Appraisal Team Leader Requirements	SCAMPI A lead appraiser	SCAMPI B and C team leader	SCAMPI B and C team leader

Selecting Appraisal Methods

Consider a family of appraisal methods in determining overall appraisal needs:

- Fit the appraisal method to the actual need.
- Many appraisal needs can be met without maturity level or capability level ratings.

SCAMPI A may not be the most appropriate choice for organizations early in their process improvement cycle.

Topics

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Fundamental Concepts

Appraisal

Appraisal reference model

Organizational unit

Organizational scope

Instantiation

Focused investigation

Objective evidence

Appraisal

An examination of one or more processes by a trained team of professionals using an appraisal reference model as the basis for determining strengths and weaknesses.

Appraisal Reference Model

The CMMI model to which an appraisal team correlates implemented process activities.

Organizational Unit

The part of an organization that is the subject of an appraisal. An organizational unit deploys one or more processes that have a coherent process context and operates within a coherent set of business objectives. An organizational unit is typically part of a larger organization, although in a small organization, the organizational unit may be the whole organization.

Organizational Scope

The collection of projects and support functions that provides instantiations of practices used within, and representative of, an organizational unit.

Organizational Scope Determination

Samples in the organizational scope must be one of the three types below:

- **Focus projects (FP):** must provide objective evidence for every PA
- **Non-focus projects (NFP):** must provide objective evidence for one or more PAs
- **Support Groups:** must provide objective evidence for practices which address organizational infrastructure or functions

If the model scope includes project related PAs, the Organizational Scope must contain at least one FP

If the OU includes more than 3 projects, the Organizational Scope must include sufficient FP & NFP to generate at least 3 instances of each practice in each project-related PA in the model scope of the appraisal

Note: The MDD is silent on OUs with 1-3 projects. We recommend the Organizational Scope include all projects as focus projects.

Organizational Scope Description

Critical factors that influence implementation of practices in projects and functions within the OU must be understood and identified

Possible Critical Factors include:

- application domains (or lines of business)
- geographical breadth
- disciplines (e.g., systems, SW, or HW engineering)
- effort types (e.g., development, maintenance, or services)
- project types (e.g., legacy or new development)
- customer types (e.g., commercial or government agency)
- lifecycle models in use within the organization (e.g., spiral, evolutionary, waterfall, or incremental)

- Sample project and support groups in the Organizational Scope must represent all critical factors identified and documented in quantifiable terms in the appraisal input and ADS

Organizational Scope Example[1]

SCAMPI V1.2 Sample Description-1
- Organizational Unit: Division XYZ, United Widgets

- Projects excluded and rationale
  - All Research Projects – short duration and piloting new processes
  - Project XV11 – legacy using processes established Jan 2001

- OU Size: 30 projects, 300 people

- Critical Factors:
  - Application domains: Missile Command and Control
    Sonar signal processing
    MDA Information Technology
  - Geographical Breadth: Sunnyvale CA
    Denver CO
    Pittsburgh PA
  - Project Types: Development
    Sustainment

Organizational Scope Example[2]

SCAMPI V1.2 Sample Description-2

- Organizational Scope
  - Project ABC – 84 people, development (Missile C2), 2 sites (Sunnyvale, Denver), Focus
  - Project Alpha – 22 people, sustainment (Sonar),1 site (Denver), Non-focus, PA:…
  - Project Delta – 52 people, development (Sonar),1 site (Denver), Non-Focus, PA:…
  - Project SEI – 42 people, sustainment (Missile C2), 1 site (Pittsburgh), Non-focus, PA:…

- Organizational Unit Coverage:
  - Population: 66%
  - Project: 13%
  - Application domain: 66%
  - Geographical breadth: 100%
  - Project Type: 100%

Instantiation

CMMI practices are abstractions which are implemented and made real in their application and implementation by projects and organizations.

The context within which the practice is applied governs the implementation.

The details of the implementation as well as the context within which the practice is implemented is referred to as the instantiation (organizational or project).

Focused Investigation

An appraisal is conducted as follows:

- A representative sample within the organizational unit is identified (i.e., projects and support groups).
- The implementation of each model practice is reviewed for members of the sample set.
- The extent to which each model practice is implemented across the sample set is representative of the extent to which the practice is implemented in the organizational unit.

Objective Evidence

Documents or interview results used as indicators of the implementation or institutionalization of model practices. Sources of objective evidence can include instruments, presentations, documents, and interviews.

Two Types of Objective Evidence

CMMI appraisal methods are based on the consideration of objective evidence as the basis for formulation of weaknesses, strengths, and ratings.

SCAMPI Class A appraisal method only requires two types of objective evidence: documents and interviews.

Documents include hardcopy, softcopy, and hyperlinks.

Interviews are exploratory or focused questions targeted at managers, practitioners and/or users.

Organizing Objective Evidence

In SCAMPI appraisals, objective evidence is organized using practice implementation indicators (PIIs).

PIIs are applicable to any practice or activity:

- The conduct of an activity or the implementation of a practice will result in "footprints" which are attributable to the activity or practice.
- They are necessary or incidental consequences of practice implementation.

Three Types of PIIs

Direct Artifacts are tangible outputs resulting directly from implementation of a practice (e.g., typical work products).

Indirect Artifacts are artifacts that are a side-effect or are indicative of performing a practice (e.g., meeting minutes, logs, reports).

Affirmations are oral or written statements confirming or supporting implementation of the practice (e.g, interviews, questionnaires).

Example of a PII Characterization

> PP SP1.1:
>
> Establish a top-level work breakdown structure (WBS) to estimate the scope of the project.

Direct artifacts:
- top-level WBS
- task descriptions
- work package descriptions

Indirect artifacts:
- meeting minutes
- team charter
- WBS development notes

Affirmations:
- "I worked on the WBS team."
- "We used the WBS to generate the estimates."

Developing Appraisal Results

For SCAMPI B and C appraisals, practices are characterized based on objective evidence. These practice characterizations and strengths and weaknesses supporting these characterizations are the only appraisal outputs.

For SCAMPI A appraisals, practice characterizations are developed at the project level, then aggregated to the organizational unit. Goal ratings, process area satisfaction and (optional) maturity level or capability level ratings are then determined based on these practice characterizations and associated weakness statements. Outputs include ratings, strengths, and weaknesses.

Topics

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Becoming a Lead Appraiser or Team Leader

Requirements for becoming a SCAMPI A Lead Appraiser

Be sponsored by an SEI Partner.

Participate as a team member on two SCAMPI A appraisals or one SCAMPI A and two SCAMPI B or C appraisals.

Successfully complete SCAMPI Lead Appraiser Training.

Successfully lead a SCAMPI A appraisal under the observation of a qualified observing lead appraiser (can also lead SCAMPI B or C appraisals).

Requirements for becoming a Certified High Maturity SCAMPI A Lead Appraiser

Phase 1 – Effective Oct 2006

- Submit an application describing education, training and experience as describes at http://www.sei.cmu.edu/certification/scampihmla.html
- Upon acceptance of the application, an oral examination will be scheduled by the SEI Appraisal Program

Phase 2 – Effective Oct 2007

- Pass a written test based on the High Maturity Body of Knowledge (in development)
- Upon passing the written test, an oral examination will be scheduled by the SEI Appraisal Program

Requirements for becoming a SCAMPI B&C Team Leader

Be sponsored by an SEI Partner.

Participate as a team member on two SCAMPI A appraisals or one SCAMPI A and two SCAMPI B or C appraisals.

Successfully complete SCAMPI B&C Team Leader Training.

Successfully lead a SCAMPI B appraisal under the observation of a qualified observing lead appraiser.

Summary

This refresher provides only a high-level summary to help you understand important appraisal concepts.

For more information, see the SEI web site at:

http://www.sei.cmu.edu/cmmi/

and

http://www.sei.cmu.edu/collaborating/partners/trans.partners.html.