The Secret Map to Hidden Treasure:

Your PIIDB

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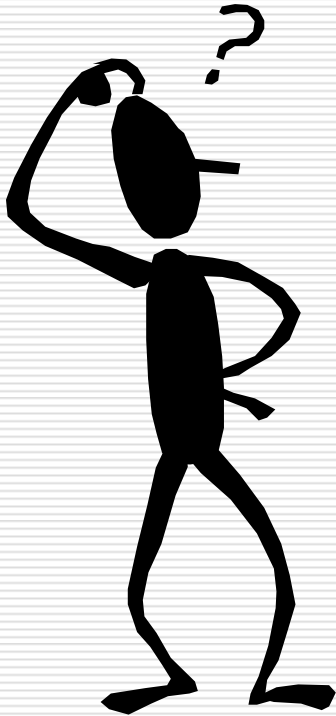
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Agenda

- What & Why?
- How to Build it
- Problems & Lessons Learned
- Tips

What & Why?

Appraisal Terms and Concepts

- "To make reasonable judgments regarding an organization's implemented processes relative to the appraisal reference model, appraisal teams base their judgments on the collection of objective evidence for each specific and generic practice applicable to process area goals within the appraisal scope."*

- Objective evidence or "footprints", left behind after a practice has been implemented, are Practice Implementation Indicators (PIIs).

- A mapping between model practices and the PIIs is called the PII Database (PIIDB)
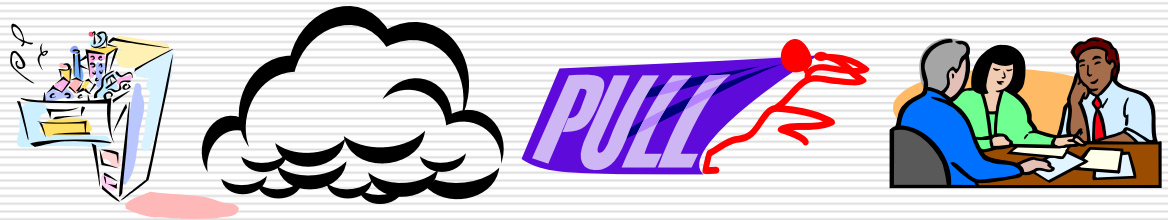
*From the SCAMPI^{SM} A, V 1.2: Method Definition Document

Appraisal Models

1. Push

2. Pull
    (Discovery)

Discovery requires that the team do a search for evidence for each practice

SCAMPI^{SM} pilots took more than a month

Process needed to be streamlined

Appraisal Models (3)

3. Verification Mapping (PIIDB)

Verification has the organization provide a map that indicates what evidence is appropriate for each practice

The appraisal team reviews the evidence and only needs to search when the data provided is not clear or convincing

Data Types

- Direct Evidence – needed for every practice

- Indirect Evidence – not necessarily for EVERY practice*

- Quiz 1: What type of evidence is a set of meeting minutes? It Depends

- Quiz 2: How many do you need of each type? It Depends

*Talk to your Lead Appraiser

An appropriate set of artifacts?

- Enough to convince the team that a practice has been fully implemented*
  - Include multiple instances for items that are produced frequently, e.g. meeting minutes
  - Cover the breadth of the practice

- But NOT everything you can think of

*Talk to your Lead Appraiser

How to Build it

Who should build your PIIDB?

What kind of knowledge is needed?

- Understanding of the model practices
- Understanding of the appraisal method
- Understanding of how the project's data is organized

Do you have one person with all 3?

If not, then you need a team

- Process person?
- Project representative?
- Consultant?

PIIDB Contents

- CMMI $^®$ practice name

- Artifact name

- Artifact location

- Evidence type (e.g. direct)

- Project or group (e.g. SEPG)

- Comments (may explain relevance of data)

- …

PIIDB format

- Does your Lead Appraiser have a tool that they recommend?

- Will you use the data for internal purposes?

- How easy is it to put data in and get it out?

- How easy is it to correct/update the data?

File   Edit   View   Insert   Format   Tools   Data   Window   Help

Type a question for help

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A1

Project Planning

Status		Key Practice / Notes	Source of OE	Document (s)	Comments	ORG	Project 1	Project 2	Project 3	Project 4	Direct	Indirect	Affirmation	Information Needed	Rating (FI, LI, PI, NI, NY)
	SG1	Estimates of project planning parameters are established and maintained.													
	SP1.1	*Establish a top-level work breakdown structure (WBS) to estimate the scope of the project.*													
		Appraisal Considerations: - Determination of WBS usage for this practice must be based on top-level WBS only, not its fully elaborated and expanded form as referenced in subsequent practices of this PA - Top-level work breakdown structure should be driven by and linked to specified product requirements. (See Requirements Management PA) - See Supplier Agreement Management process area for more information about acquiring work products from other sources external to the project - Level of supporting documentary evidence will vary based on project size/duration. Larger projects may have minutes from estimation meetings, estimation teams, and tools use, etc. Smaller may have none. Appraisal team will need consensus on the WBS elements that will be expected. See PP SP1.4-1 for derivation of detailed work breakdown structures from top-level work breakdown structures.													
		Direct Artifact Example: - Work Breakdown Structure - Top-level WBS revision history													
		Indirect Artifact Example: - Task descriptions - Work product descriptions - Product requirements, product roadmaps - Organizational standard WBS template - Identification of work products (or components of work products) that will externally acquired.													
	1														
	2														
	3														
	4														
	5														
	6														
	7														
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Instructions   REQM   **PP**   PMC   SAM   MA   PPQA   CM   RD   TS   PI   VER   VAL   OPF

Ready   NUM

Cost & Timing

- PIID development can be the major driver of total appraisal cost

- Data collected over a set of appraisals where the organization tracked internal effort, showed PIID preparation to be ~60%

- Total PIID effort (development, quality, rework, quality, …) can run to ~40 hours per PA per project
  - Level 2, 3 projects => 5 person months
  - Level 3, 3 projects => almost a person year

Cost & Timing - continued

- The highest quality will come from developing the PIIDB in several iterations, so start early

- If it is possible to use the same projects in a series of appraisals (B, then A), then going through the B will identify many of the PIIDB issues and allow corrections to the data collection process prior to the A.

Validation

- Involve team members in quality checks

- Don't wait for Readiness Review to check the quality of the PIIDB

- Evolve PIIDB over a series of appraisals

- Effort devoted to PIIDB (including quality checks) should be proportional to the importance of achieving the ratings

Remember: having an inaccurate PIIDB does not just make it harder to find the correct data, it may convince the team that appropriate data does NOT exist
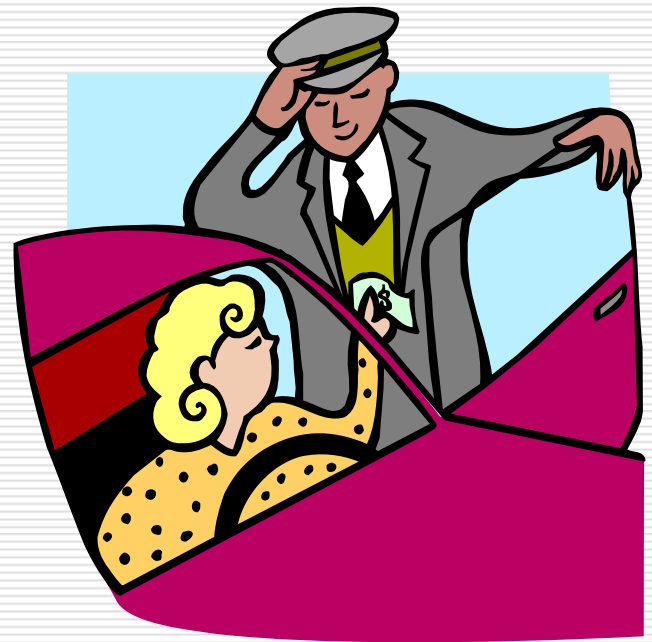
Problems & Lessons Learned

Problems

- What sort of problems have you encountered in trying to plan for or develop PIIDBs?

- Have others encountered this same problem? And if so, were you able to solve it?

Lessons Learned

- What other lessons have you learned related to PIIDBs?

Tips

Misconceptions

- "Creating a PIIDB looks straightforward, I'll have our summer intern do it the week before the Readiness Review."

- "This is just a guide anyway. Even if it is wrong, it is the appraisal team's duty to find the right stuff."

- "If 2 pieces of evidence per practice is good, 10 pieces should be 5 times as good."

Potential Work Saver

Is the standard process detailed enough so that it will be fairly consistent from project to project where a specific type of data will be found?

Provide the projects with a PIIDB that already tells them where to find the evidence.

e.g.

PP SP 2.2 Identify Project Risks

see section 3.4 of the project Risk Management Plan

Limit Indirects

- Direct evidence is sought on every practice: you always need to include direct evidence

- For every practice you also need EITHER indirect evidence OR an affirmation

- Indirect evidence is usually the most difficult to accurately identify in a PIIDB

- One approach to reducing the PIIDB development effort: Don't try to include indirect evidence for all practices, rely on affirmations for some (e.g. GPs)*

*Talk to your Lead Appraiser

Use Directories

- When the evidence you want to include is a frequently generated item (e.g. monthly meeting minutes or peer review reports) linking to the directory where the items are stored will provide advantages

  - The link will not go stale – new items will continue to be populated into the directory so fresh evidence is available

  - The appraisal team is free to sample from the set, thus aiding confidence in institutionalization

PIIDB Preparation

If done poorly

- Can consume vast resources to prepare
- Will reflect a poor understanding of what is needed
- Will cause appraisal to proceed very slowly
- Can confuse the true state of the practice

If done well

- Will require limited restarts or rework
- Accurately reflects the work done in the organization
- Provides an efficient means for an appraisal team to find appropriate evidence
- Identifies appraisal risks by uncovering holes in implementation

Questions ?

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