

Using Workshops to Speed CMMI Adoption and Evidence Gathering

CMMI Technology Conference & User Group
12-15 November 2007

Rick Hefner, Gwynn Pyle,
Michael Sturgeon, Janice Tauser
Northrop Grumman Corporation
rick.hefner@ngc.com

Background

- **The hardest part of implementing CMMI-based improvements is getting projects to understand and perform the practices**
- **Workshops can be an effective mechanism for:**
 - Raising awareness and buy-in
 - Developing a deeper understanding of the practices
 - Ensuring they are properly implemented by the project personnel
- **This presentation will explain how to plan and conduct CMMI workshops, based on the proven methods used by Northrop Grumman in achieving Level 5 across 13 organizations**

Topics

- **When the typical SCAMPI C/B/A sequence doesn't work**
- **The workshop concept**
- **How to scope and plan the workshop**
- **Choosing workshop participants**
- **Identifying the "right" evidence**
- **Additional opportunities**
- **Dealing with resistance and lack of buy-in**
- **Workshop follow-up**
- **Sustaining senior management support**
- **Lessons Learned**

Characteristics of CMMI Appraisal Classes

The ARC (Appraisal Requirements for CMMI) defines appraisal classes

- A guide to inventors of appraisal methods, and their customers

Key differentiating attributes for appraisal classes include

- the degree of confidence in the appraisal outcomes
- the generation of ratings
- appraisal cost and duration

Appraisal Requirements for CMMI, Version 1.1, CMU/SEI-2001-TR-034

Characteristics	Class A	Class B	Class C
Amount of Objective Evidence Gathered (relative)	High	Medium	Low
Ratings Generated	Yes	No	No
Resource Needs (relative)	High	Medium	Low
Team Size (relative)	Large	Medium	Small
Appraisal Team Leader Requirements	Lead appraiser	Lead appraiser or person trained and experienced	Person trained and experienced

SCAMPI-A

SCAMPI-B

SCAMPI-C

References: "A Quantitative Comparison of SCAMPI A, B, and C," R. Hefner and D. Luttrell, CMMI Technology Conference and User Group, 2005

NORTHROP GRUMMAN

"Using Workshops to Speed CMMI Adoption and Evidence Gathering", 2007

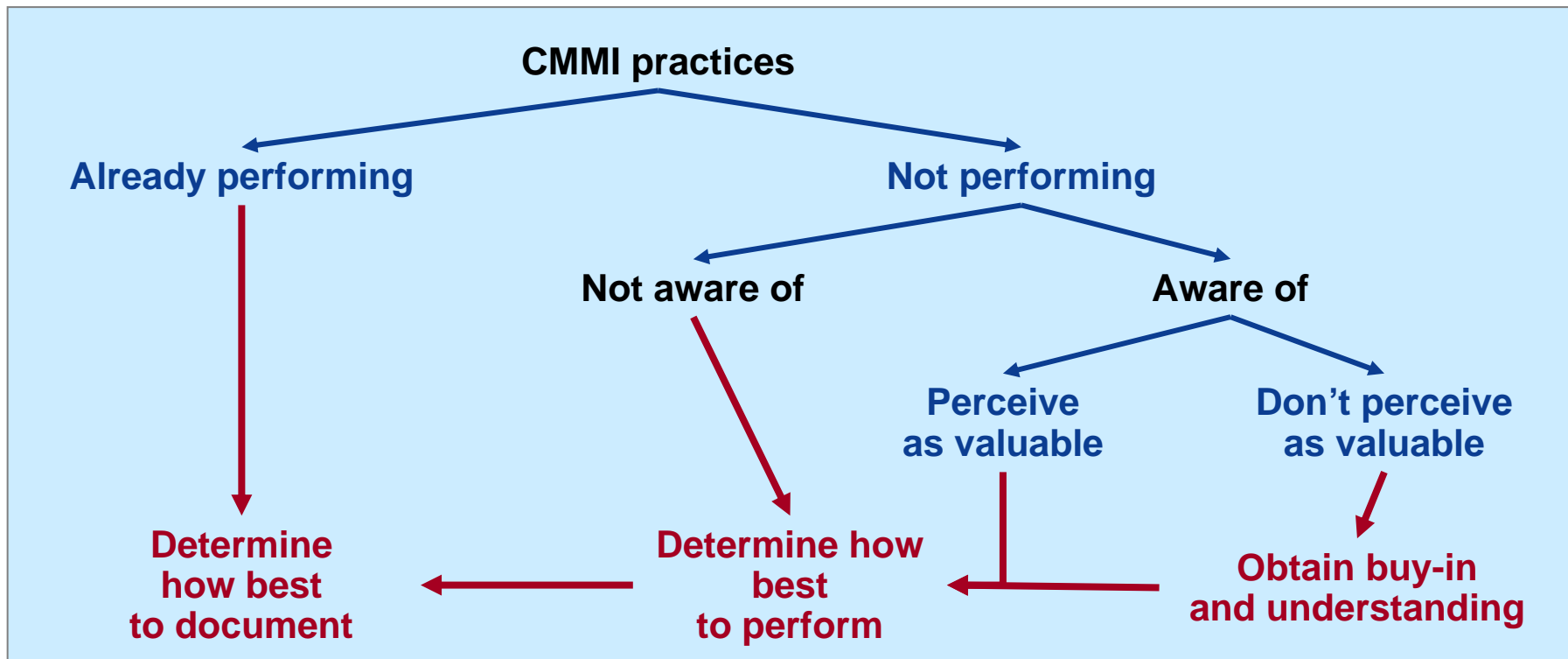
When the Typical SCAMPI C/B/A Sequence Doesn't Work

These methods can form building blocks for a progression of appraisals – for example, starting with a SCAMPI C reviewing the process descriptions, then a SCAMPI B investigating their deployment to projects, finally leading to a formal benchmarking event focused on institutionalization of the practices across the organization.

-- Handbook for Conducting Standard CMMI Appraisal Method for Process Improvement (SCAMPI) B and C Appraisals, Version 1.1

- **The typical SCAMPI C/B/A sequence works well for an organization starting a process improvement effort, i.e., no defined processes**
- **May not work as well for an organization that has existing processes, and whose main issue is project adoption**

Adopting the CMMI



■ Key enablers

- Willingness to learn unfamiliar practices
- Desire to extract value rather than "check the box"
- Ability to interpret the CMMI in your context
- Access to experts

The Workshop Concept



- **Objectives:**

- Determine current gaps relative to project compliance with CMMI
- Map existing evidence to CMMI
- Determine effective ways to perform and/or document practices
- Raise awareness of project personnel, build buy-in

- **Process:**

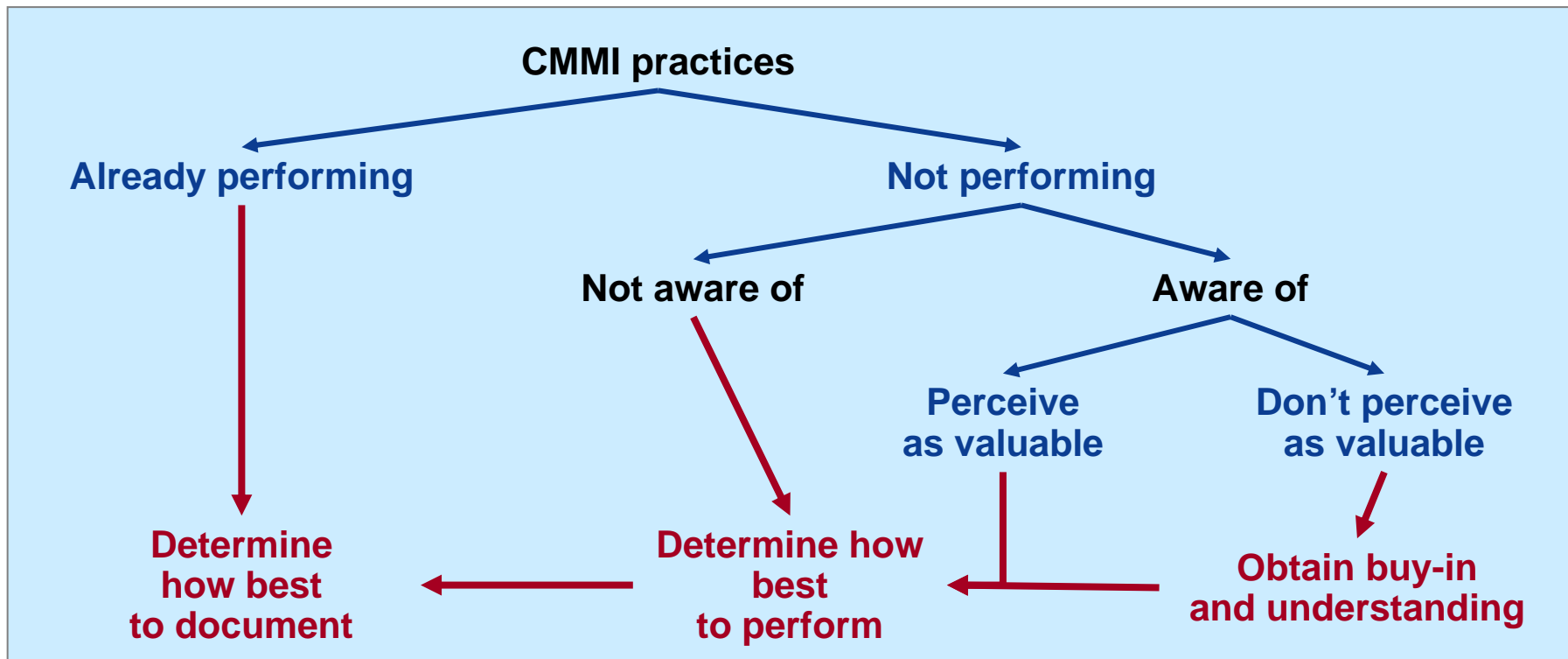
1. Train projects on CMMI terminology and structure (1-3 day)
2. Projects complete PIIDs mapping of their existing evidence, self-assess practice and evidence gaps
3. A CMMI expert walks a group of projects through the model. For each practice, the expert:
 - Describes the practice and typical evidence
 - Reviews each project's evidence for acceptability
 - Identifies practice gaps and discusses possible solutions
 - Identifies documentation gaps and possible solutions

How To Scope And Plan The Workshop

- **Several projects can participate at the same time**
 - Explain once to many projects, build off each other's questions
 - Can use projects who are performing the practice, or documenting properly as examples
 - Peer pressure
- **Having multiple projects means:**
 - More frequent context switching by the CMMI expert
 - More logistics
- **Best practices**
 - CMMI expert should become familiar with each project's context, terminology
 - One process area per session with process area performers
 - Front screen display of the PIIDs table
 - Each project uses a separate computer for their PIIDS, evidence display



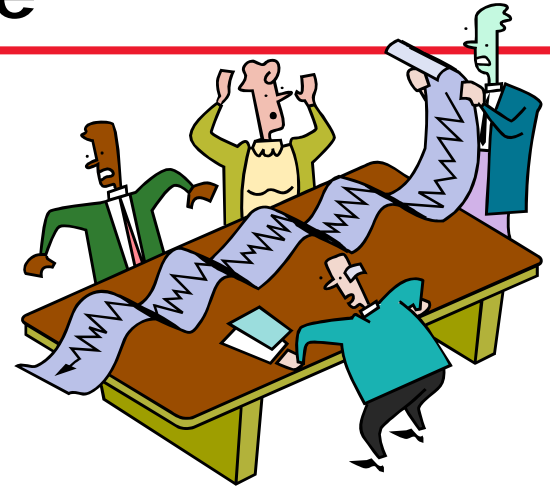
Choosing Workshop Participants



- **The performer(s) of the process should be present**
 - Explain implementation and evidence
 - Explain context and project culture (e.g., barriers)
 - If practice is not currently being performed, discuss the value of the practice, and possible approaches that might be value-added
 - If practice is being performed but not documented, discuss possible documentation approaches that fit the culture

Identifying The "Right" Evidence

- Because so much of the focus is on finding direct evidence for each practice, it is easy to forget that the objective is improving the process
- Challenges
 - Bring Me a Rock
 - "If our document said _____, would that be enough?"
 - Documenting for the appraisers, not the project personnel
- Remember: the purpose of plans and processes is to provide guidance to the project personnel
 - Appraisers can suggest what items should be covered
 - Adequacy is determined by whether project personnel understand what to do



Additional Opportunities

- **Can conduct simultaneous quality assurance process audits**
 - Appraise against the projects defined process (which probably includes all the CMMI practices)
 - Educate the QA staff on the proper approach to an audit, and the terminology/meaning of the CMMI practices
- **Can look for other process improvement opportunities beyond CMMI compliance**
 - Consistency across the organization
 - Identification of best practices
 - Efficiency, effectiveness
 - Need for tools, templates, training

Dealing With Resistance And Lack Of Buy-in

- **Workshops offer a great opportunity to gauge project understanding and buy-in to the improvement effort**
 - Do the project personnel make a honest effort to map their evidence?
 - Do they show up on time and prepared?
 - Do they appear engaged in determining solutions?
 - Are they looking to improve their processes, or just satisfy the appraisers?
 - What factors are preventing their complete commitment (time, knowledge, management encouragement, etc.)

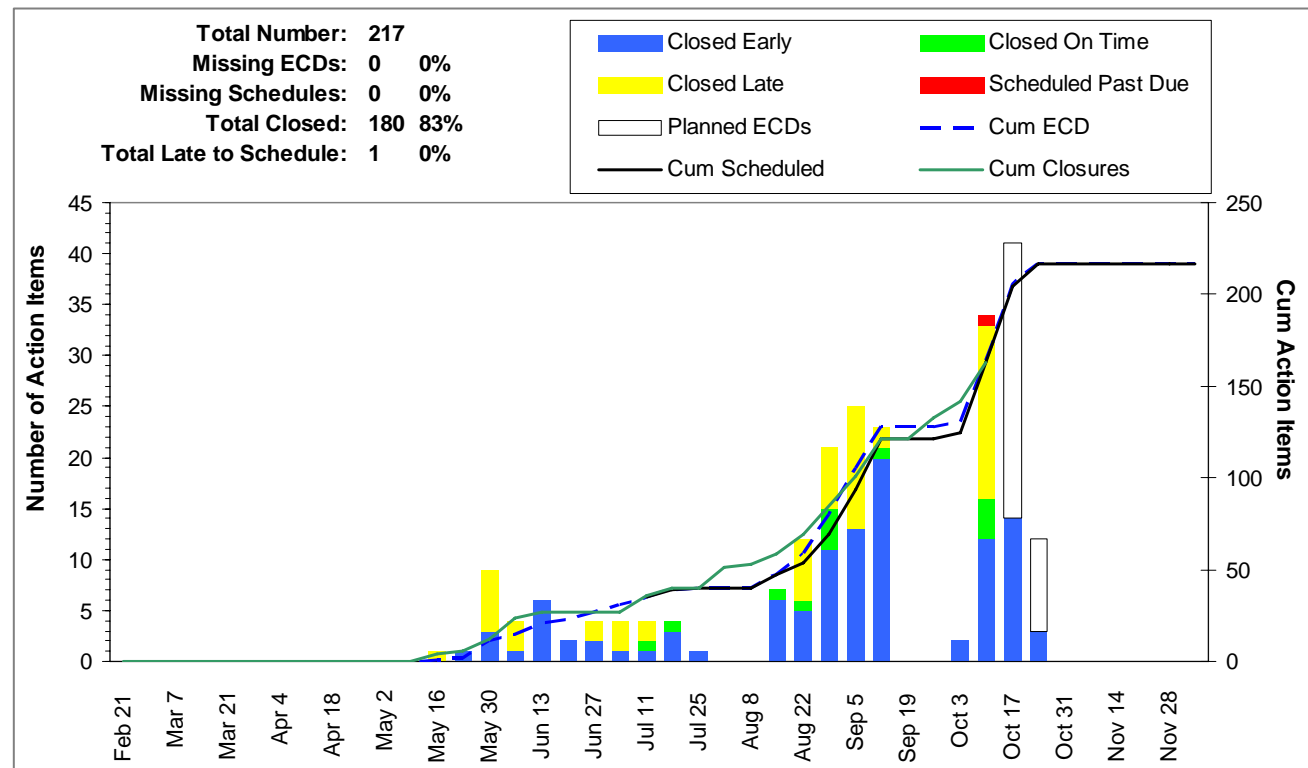
Workshop Follow-up



- **Each workshop results in**
 - A set of practice gaps and proposed approaches (start doing this)
 - A set of documentation gaps and proposed approaches (start documenting what we are currently doing like this)
- **These should be converted into a set of actions and timelines**
 - When will the evidence exist, so we can re-assess?
- **Tracking against this timeline will tell you when you will be ready for another workshop and eventually, a more formal appraisal**
 - A second group session is sometimes useful
 - Isolated gap closures can be handled one-on-one

Sustaining Senior Management Support

- Senior management should be kept appraised of progress and barriers to achieving their goals
 - Number of current gaps and rate of closure
 - Common gap areas
 - Opportunities beyond CMMI compliance
 - Resistance



Lessons Learned

- **The hardest part of implementing CMMI-based improvements is getting projects to understand and perform the practices**
- **Workshops can be an effective mechanism for:**
 - Raising awareness and buy-in
 - Developing a deeper understanding of the practices
 - Ensuring they are properly implemented by the project personnel
- **Engaging with the projects, and understand their barriers to improvement, is the true spirit of process improvement**