CMMI – Smart Use by Acquirers

PEO and Program Systems Engineers Roundtable

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OUSD(AT&L) Deputy Director,
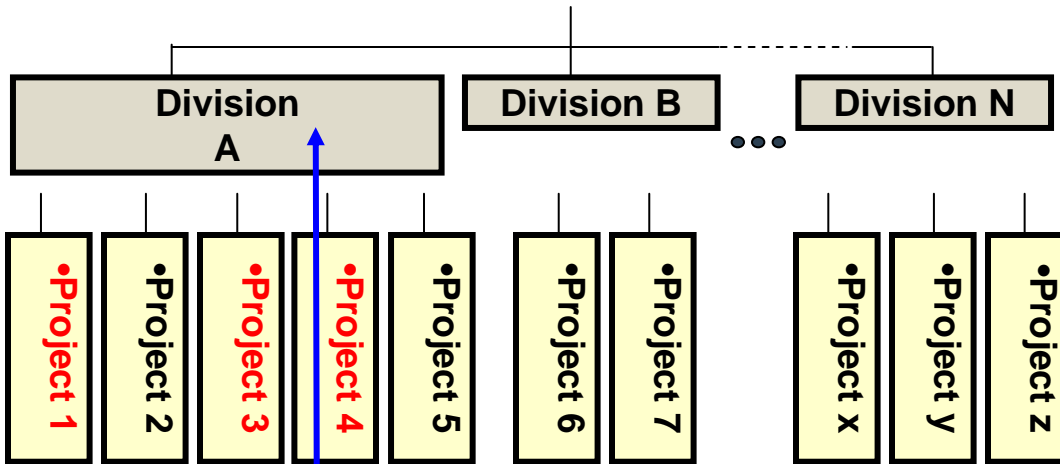Software Engineering and System Assurance

CMMI: Implementation Issues

- Developers execute at lower maturity levels than their organizations have achieved and advertised
- Assurance that new projects will incorporate CMMI processes
- Appraiser quality – training, consistency
- Lack of agreement on what constitutes Levels 4 and 5
  - Requirements for demonstrated behavior
  - Definition of Levels 4 and 5 themselves
- Appraisal disclosure statement content
  - Coverage of the organization appraised
  - Performance on individual process areas
- Training and education for acquirers
- CMMI misuse in source selection

Proper use of CMMI requires knowledge of these issues

One Problem

XYZ Corp.

Division A **Division B** **Division N**

• Project 1 • Project 2 • Project 3 • Project 4 • Project 5 • Project 6 • Project 7 • Project x • Project y • Project z

Maturity Levels apply **HERE** based upon appraisals of **THESE** …

… but acquirer's project is **HERE** or **HERE**

Published maturity levels may be based on a single location

Improvements Made to CMMI v1.2

- The Model
  - New material added to ensure an organization's processes are used at project start-up
- The Appraisal Method
  - Instituted 3 year limit for which an appraisal is valid
  - Expanded content of Appraisal Disclosure Statement (ADS):
    - Precisely define organization unit and projects appraised; name, location, size, products, application domains
  - Improved project sampling rules
  - Require public posting of appraisal results for organizations that claim a level in proposals or advertising
    - http://sas.sei.cmu.edu/pars/
- Appraiser Training and Certification
  - Updated qualifications, conducting certification with oral exams
  - Developed high maturity course, body of knowledge

Acquirer Knowledge and Resources

- Issue: Inadequate CMMI training and education for acquirers

- New Resources: Guidebook and Model
  - *Understanding and Leveraging a Supplier's CMMI Efforts: A Guidebook for Acquirers* published
    - Guidance for an acquirer to understand and leverage a supplier's use of CMMI for Development (CMMI-DEV)
  - *CMMI for Acquisition (CMMI-ACQ)* model to be published 1 November
    - Best practices for process improvement in an acquisition office

Key Tips in the Guidebook

- Do not ask for CMMI maturity levels in RFPs
  - Ask for capability in processes that are key to the success of your program
- Read the Appraisal Disclosure Statement (ADS)
  - Determine what part of the organization was actually appraised and how it relates to your program
  - For high maturity (levels 4 and 5), determine what processes were actually improved
  - Ask for clarification, appraisal findings if needed
- Recognize that levels are a result of appraisals that cost money
  - Can achieve results using other assessment techniques
  - Can do post-award checks to ensure your project is implementing its promised processes

Bottom Line on use of CMMI in DoD

- DoD does not place significant emphasis on capability level or maturity level ratings
  - CMMI is a <u>tool</u> for internal process improvement
- Lack of emphasis on ratings is prudent
  - Findings that not all suppliers are exhibiting behavior consistent with their attained CMMI maturity level rating
- Essential that DoD and industry use CMMI capability in the right manner, with appropriate measure, in order to realize benefits
  - CMMI-DEV provides a set of best practices to be employed by the supplier

Process Improvement Opportunities for the Acquirer

- Acquisition Module (CMMI-AM v1.1)
  - Concise (less than 40 pages) collection of best practices for an acquisition organization
  - Self-assessment "checklist" for internal process improvement

- Acquisition Model (CMMI-ACQ)
  - Full CMMI model of best practices and implementation approaches for an acquisition organization
  - CMMI-appraisable for benchmarking, certification as well as internal process improvement

Questions/Comments?

Guidebook:
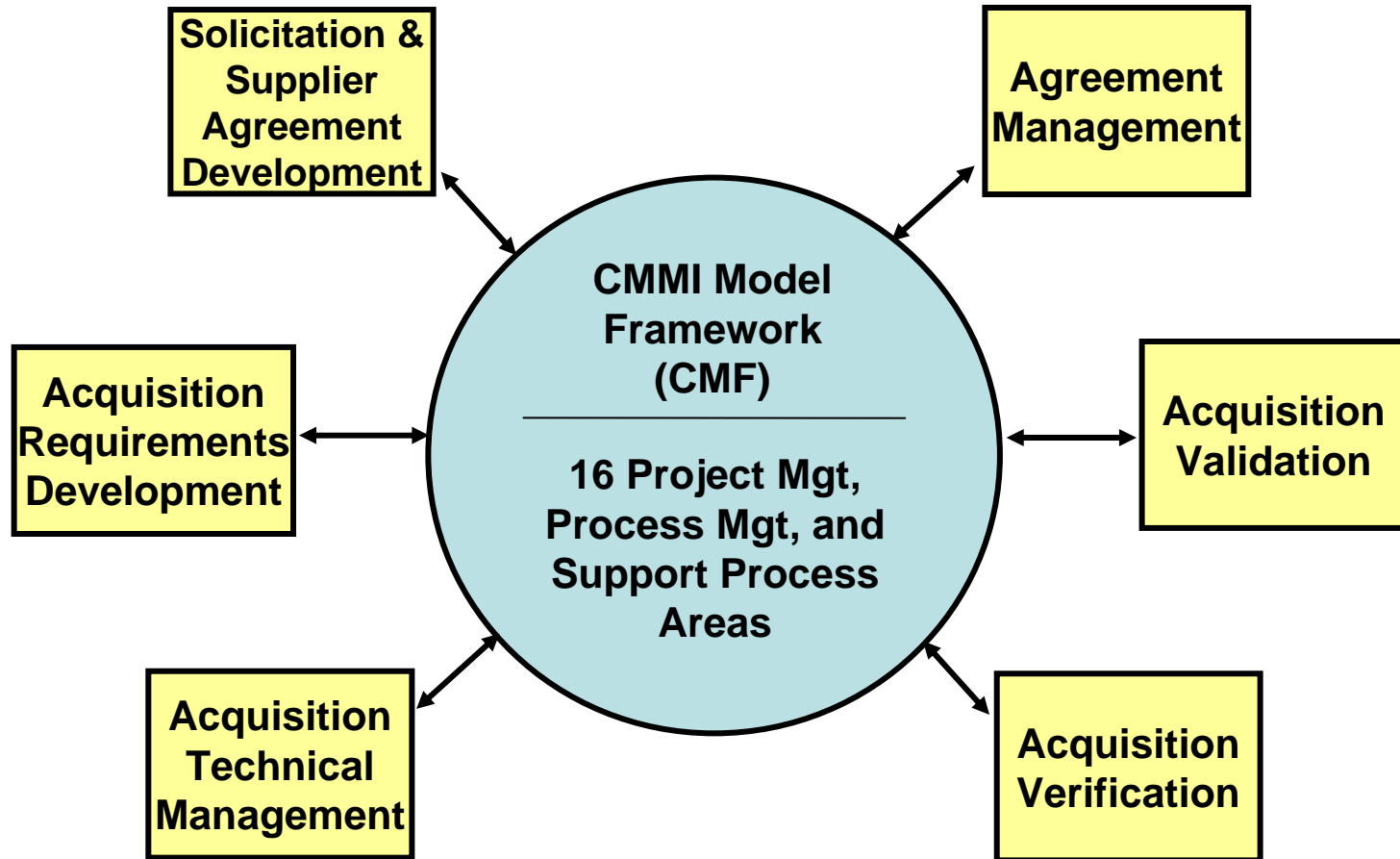http://www.sei.cmu.edu/publications/documents/07.reports/07tr004.html

CMMI-ACQ Model:

http://www.sei.cmu.edu/cmmi/models/index.html

CMMI-AM Module:

http://www.sei.cmu.edu/publications/documents/05.reports/05tr011.html

CMMI-ACQ v1.2
Acquisition Category Process Areas

Solicitation & Supplier Agreement Development

Agreement Management

CMMI Model Framework (CMF)

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16 Project Mgt, Process Mgt, and Support Process Areas

Acquisition Requirements Development

Acquisition Validation

Acquisition Technical Management

Acquisition Verification

ACQ PAs seamlessly interact with all CMF PAs through ACQ-specific material added to CMF PAs

Acquirer and Supplier Mismatch

Mismatch

mature acquirer mentors low maturity supplier

outcome not predictable

Matched

acquirer and supplier are both high maturity

highest probability of success

Disaster

no discipline
no process
no product

Mismatch

immature acquirer

mature supplier

Customer encourages short cuts.

High

Low

Acquirer

Low

High

Technical & Management Skill

Supplier