Implementing the Managed Discovery Approach
What Worked, What Didn’t Work

November 6, 2012
Presented by
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Topics

• Background
• Planning
• Executing
• Lessons Observed
• Results
Initial Startup Issues

- Dispersed campuses
- Dispersed team members
- Team availability
- Inexperienced team members
- Project choices
<table>
<thead>
<tr>
<th>Parameters</th>
<th>2006</th>
<th>2009</th>
<th>2012</th>
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<tr>
<td>Team Size</td>
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<td>7</td>
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<td>LA</td>
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*LA = Lead Appraiser

Different lead appraiser for each appraisal (C, B, A)
Past Lessons Observed

- Large number of projects involved
- Gigabytes of data collected and not used
- Large number of readiness review actions
- Excessive representation in interviews
- Inconsistent model interpretation
- Schedule lag
- Project teams burdened with collecting and mapping
- Costly
Objectives

- Reduce Footprint
  - Manage data collection

- Reduce Duration
  - Manage schedule

- Reduce Stress
  - Manage process

- Reduce Overall Cost
Appraisal Data Collection Approaches

• Discovery
  – Limited objective evidence exists and appraisal team must probe/search for necessary evidence to obtain sufficient coverage of model practices with in scope

• Managed Discovery
  – Based upon a series of data calls starting with a key set of artifacts, e.g., project plans and supporting documentation
  – This approach was selected as a means to achieving the core appraisal objectives

• Verification
  – Based upon the assumption that all appraisal data has been identified and prepared by the organization in advance of the appraisal
  – Artifacts provided may not be applicable and/or never reviewed by the appraisal team leading to significant amount of time, effort and funding
Application of Appraisal Approaches

Discovery 2006

- First appraisal for most campuses and projects
- Uncertainty in model interpretation
- Uncertainty in adequacy of data

Verification 2009

- Assumed projects had the “right stuff”
- Extensive rework

Managed Discovery 2012

- Defined data requirements
- Minimal rework
Managed Discovery (collect, review, map)

• Managed Discovery
  – Identify appraisal mini teams
    • Co-locate team members
    • Assign specific process areas (PAs)
  – Train data collectors
  – Create data lists
  – Plan data call schedule
  – Perform data calls
  – Review and map
  – Repeat to achieve 100% coverage of all maturity level 3 PA
Overall Process (1)

**Identify Team**
- Experience - no experience
- Determine business unit coverage
- Break into mini-teams

**Select Lead**
- Understood chosen appraisal strategy
- Willing to work with team on new approach
- Flexible

**Select Programs**
- Develop sampling strategy
- Establish Sampling Factors
- Establish subgroups
- Identify candidate projects
Appraisal Candidate Program Selection

1. Identify Sampling Factors
   - Size
   - Location
   - **Customer**
   - **Work type**
   - Duration
   - Other

2. Identify Subgroups
   - DoD
   - Development
   - Production

3. Establish Reqs.
   - One “primary” program per/BU
   - One “support” program
   - Small- Medium-Large spread

4. Select Candidates
Overall Process (2)

Collect, Review, Map

- Implement managed discovery approach
- Ensure full coverage of all maturity level 3 process areas
- Fully engaged team
- Continuous data review

Conduct Readiness Reviews

- On-site
- Full team attendance
- Class B (3 days)
- Class A (3 days)

Conduct Appraisals

- Conduct interviews
- Consolidate data
- Characterize
- Class B (5 days)
- Class A (5 days)
## Mini Team Assignment

### Mini Teams Process Areas

<table>
<thead>
<tr>
<th>Mini Teams</th>
<th>Process Areas</th>
<th>Total # of Practices</th>
<th>1st review period (50% complete) 7 wks</th>
<th>2nd review period (75% complete) 4 wks</th>
<th>3rd review period (100% complete) 3 wks</th>
<th>Required number of practices mapped per week</th>
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<td>MINI T1</td>
<td>PP PPQA IPM RSKM</td>
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### Optimize Team Expertise
Executing
Plan Execution

• Develop data lists – 12/11
  – Budget turned on 1/12

• Set up appraisal tool per project per mini team

• Perform 3 data calls (7, 4, 3 weeks apart)
  – Mini teams review and map data received
  – Refine next call list
  – Repeat process until all data is collected

• Assign cross-team PA reviews

• Develop interview list requirements
  – 1 representative per process area per project
  – Interview candidates cover several process areas

• Track status
# High-Yield Work Products

The following table is intended to provide some examples of key work products that can provide one-to-many relationships to multiple practices in the CMMI-DEV v1.3 reference model in scope.

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<thead>
<tr>
<th>Category</th>
<th>Key Work Products</th>
<th>Products Identified</th>
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</table>
| **Organizational Assets** | Policies, Processes, Procedures, Templates  
Process Asset Library  
Process Improvement Plan  
Lifecycle Model Descriptions  
Tailoring Criteria and Guidelines  
Work Environment Standards  
Rules and Guidelines for Teams  
Organizational Training Plan  
Organizational Tactical Training Plan  
Train-the-Trainer process  
Training Waivers  
Training Records  
Training Effectiveness’ Measures |                                                                                 |
| **Planning Products**  | Program Management Plan (PMP)  
Project Tailoring Matrix/Records  
Integrated Master Plan and Integrated Master Schedules (IMP, IMS)  
Risk Management Plan  
Decision Analysis and Resolution Records  
Configuration Management Plan (CMP)  
Systems Engineering Management Plan (SEMP)  
Software Development Plan (SDP) |                                                                 |
## Readiness Review Status

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Issues

- 3 teams making data calls overwhelmed POC
  - Teams developed a staggered call schedule

- Funding was not available until 1st quarter 2012

- Duplication of collected data
  - Teams used sandboxes for data collection
  - Failed to check for existing data

- AT members assigned tasks outside of appraisal
  - Add additional appraisal team member to compensate

- AT members added unnecessary interview candidates
Lessons Observed
Team Perspective – The Positive

• High marks for managed discovery approach

• Early data calls reduced schedule lag

• Having data collector POC reduced confusion and saved time

• Managed discovery allowed plenty of time to conduct team reviews

• Early identification of best practices and recognized issues enabled efficient and successful readiness reviews

• Minimal rework resulted from all appraisal reviews

• Efficiencies gained using managed discovery accommodated late inclusion of one project

• Process flexible – added last minute project
Team Perspective – Improvements

• Hold appraisal team training prior to first data call

• At first data call request all program plans; review plans; develop next data request list
  – Missing or non-existent data will be apparent

• Coordinate data lists between teams
  – Use index list to eliminate duplication of data

• Refine interview process
  – Identify primary and backup interviewees

• Pattern data directory structure after program data structure

• Communicate and manage expectations with team, campus, program
Results
Results

- Reduced data footprint by several gigabytes (8Gb to 4Gb)
- Reduced number of projects (12 – 6)
- Reduced number of interviewed project personnel (139 – 58)
- Reduced appraisal team time on site (31 days – 16)
  - Reduced travel costs
- Reduced time spent collecting, sorting, and mapping (6 mo.- 3 mo.)
- Eliminated burden on projects
  - Minimal impact to schedule
  - No impact to budget
- Mini-teams became very knowledgeable in assigned PA
- 37% reduction in cost over 2009 appraisal (1 campus’ numbers)
  - Total hours for all appraisal related activities = 4492 hours
Questions
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434-974-2488

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619-472-8810
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