



The Continuous Representation: Cultivating Process Improvement from Grassroots Efforts

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Agenda

- **My Background**
- **Overcoming Objections to CMMI**
- **Know the Problems**
- **Staged vs. Continuous for Small Organizations and Project Teams**
- **Small Project Teams**
- **The Plan**
- **Questions?**



My CMMI Background

- **Member of SCAMPI B & C Development Team**
 - **Member of Honeywell Aerospace and Corporate IT Appraisal Teams**
 - **Authorized SCAMPI B & C Lead Appraiser**
 - **Candidate Authorized SCAMPI A Lead Appraiser**
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- **Led teams of varying sizes toward some form of CMMI compliance at Honeywell, FM&T; Lockheed Martin, ATARS; and Sandia National Laboratories**

CMMI Objections



- Used inappropriately, ANY process improvement initiative can cause these problems.
- The key is to focus on what benefits the team or organization the most.

- CMMI creates endless documentation and useless artifacts
- CMMI is only for large organizations and projects
- CMMI interferes with creativity
- CMMI costs too much
- CMMI is too large and complex



Overcoming CMMI Objections

- **Listen to and document objections**
 - Understand what the apprehension is
 - Address the issues directly
 - Communicate with and involve management in these discussions
- **Consider process improvement over a “Level”**
 - Discuss the pros and cons with management
 - Realize that the “Level” can always come later

Know the Problems

Change Resistance

- What I'm doing works fine, **why change?**
- I don't have time to learn something new, **what's in it for me?**
- I don't trust **management's** motivation for change!

Emotional Responses

- If I change, that means what I've been doing in the past was wrong...
- I don't want to move out of my comfort zone...
- I have no control over what is changing...





Staged vs. Continuous

For small organizations and project teams...

Staged

- Can be costly, especially when Maturity Levels are selected arbitrarily
- Overwhelming for people new to process improvement
- Can lead to process improvement gone

BAD

Continuous

- Cost effective; organizations can prioritize and where they need to improve systematically
- Reduces anxiety by focusing on limited areas
- Supports the need for institutionalization

Presentation Scope

Small organizations and teams

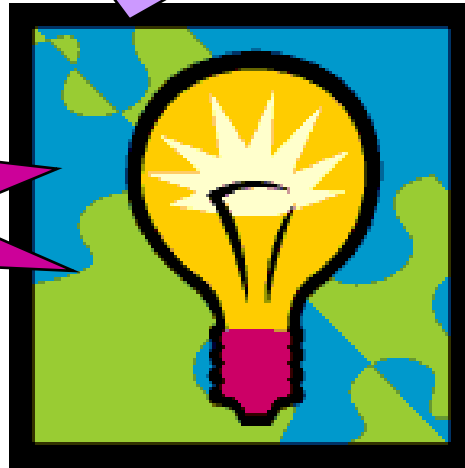


- Team size of 1-5 people
- New to defined or consistent use of process
- Have a general desire to improve the work that they do
- Have some undefined processes in place that are unique to each team member
- Averse to CMMI

The Plan

Let the team build the processes

What will benefit the team?



Take small steps

Bottom up approach

What will benefit the customer?



Bottom Up/Grassroots Approach

- **Find process improvement grassroots advocates**
 - These people believe that their work can be improved and are willing to do something to change
 - They generally do not like “initiatives” because they have seen these come and go
 - They are leaders in their work community
- **Let the advocates drive the change**
 - Other practitioners trust these advocates
 - They understand how to express the need for change to their peers



Give the Implementation Team Control

- **Discuss and identify benefits that can be achieved from change**
 - Identify benefits to the team members
 - Identify benefits to the customers
 - Identify benefits to the organization
- **Identify areas for improvement**
 - Teams identify areas for improvement
 - Teams prioritize the identified areas
 - Teams then schedule the improvement efforts



Small Steps

- **Develop a schedule that works for the implementers**
 - **Keep management informed**
 - **Allow for small increments of change**
 - **Small steps that elicit great success will allow for bigger steps the next time around**
 - **Hold people accountable for their work**
 - **Communicate frequently**



Start with Existing Processes

- **Identify existing processes**
 - Provide time for teams to share what they do
 - Include both documented and undocumented processes
 - Take the time to understand the underlying process culture
- **Discuss how existing processes can be improved**
 - Attempt to maintain the culture as processes are improved



Simple Steps to Process Improvement

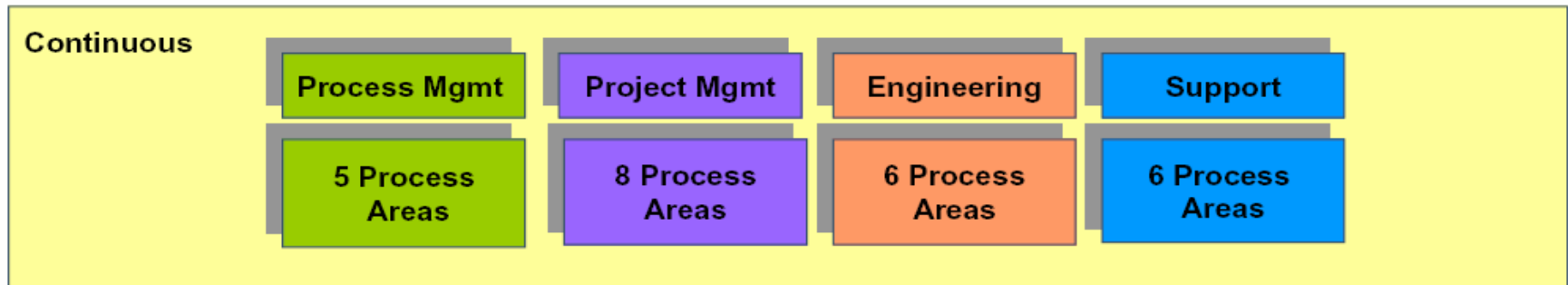
- **Define what you do** (may be the draft of a process)
- **Identify areas for improvement**
- **Establish goals**
- **Develop a process** (or refine what you already have)
- **Use the process**
- **Reassess how you are doing** after using the new process
- **Continuously improve**, as needed



Using the Continuous Representation

- **Use the continuous representation as a process improvement guide**
 - Provides a mechanism for measuring improvement toward goals
 - Allows management to identify readiness for a formalized appraisal
- **Avoid “reinventing the wheel”**

Continuous Representation



- Organizational Process Focus
- Organizational Process Definition
- Organizational Training
- Organizational Process Performance
- Organizational Innovation and Deployment

- Requirements Management
- Requirements Development
- Technical Solution
- Product Integration
- Verification
- Validation

- Project Planning
- Project Monitoring and Control
- Supplier Agreement Management
- Integrated Project Management
- Risk Management
- Integrated Teaming
- Integrated Supplier Management
- Quantitative Project Management

- Configuration Management
- Process and Product Quality Assurance
- Measurement and Analysis
- Decision Analysis and Resolution
- Organizational Environment for Integration
- Causal Analysis and Resolution



Continuous Generic Goals

Generic Goals	Generic Practices
GG1: Achieve Specific Goals	GP 1.1: Perform Base Practices
GG2: Institutionalize a Managed Process	GP 2.1: Establish an Organizational Policy GP 2.2: Plan the Process GP 2.3: Provide Resources GP 2.4: Assign Responsibility GP 2.5: Train People GP 2.6: Manage Configurations GP 2.7: Identify and Involve Relevant Stakeholders GP 2.8: Monitor and Control the Process GP 2.9: Objectively Evaluate Adherence GP 2.10: Review Status with Higher Level Management
GG3: Institutionalize a Defined Process	GP 3.1: Establish a Defined Process GP 3.2: Collect Improvement Information
GG4: Institutionalize a Quantitatively Managed Process	GP 4.1: Establish Quantitative Objectives for the Process GP 4.2: Stabilize Subprocess Performance
GG5: Institutionalize an Optimizing Process	GP 5.1: Ensure Continuous Process Improvement GP 5.2: Correct Root Causes of Problems



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Define What you Do

Process Management

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- Organizational Process Definition
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Engineering

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Identify Areas for Improvement

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Prioritize Improvement Areas

Process Management

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- Organizational Process Definition
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- Organizational Process Performance
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Engineering

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1

Product Management

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2

Support

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Establish Goals - 1

Process and Product Quality Assurance Process Area

- **SG 1 Objectively Evaluate Processes and Work Products**
 - SP 1.1-1 Objectively Evaluate Processes
 - SP 1.2-1 Objectively Evaluate Work Products and Services
- **SG 2 Provide Objective Insight**
 - SP 2.1-1 Communicate and Ensure Resolution of Noncompliance Issues
 - SP 2.2-1 Establish Records



Establish Goals - 2

- **Goals may be all or some of the specific practices**
- **Be careful with the jargon**
 - “We are working toward improving our functional testing” **versus**
 - “We are implementing SPs 1.1 – 1.3 in order to improve the way that we prepare for functional testing
- **It is important to pace achievement towards goals to ensure success**



Establish Goals - 3

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Establish Goals - 4

- **Generic practices start to take care of themselves as processes improve**
 - **Monitoring generic practices should be a project management activity reported to management**
- **Don't talk CMMI until practitioners are ready**
 - **Gradually introduce the fact that the process improvement efforts align well with CMMI implementation**



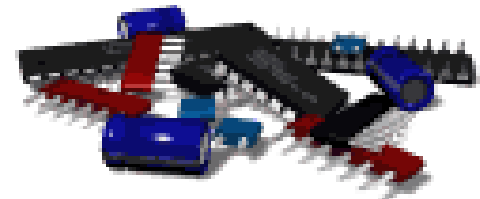
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Develop a Process

- **Relevant practitioners need to write, or at least edit, the process**
- **Keep the process simple, even if it is not complete**
- **Don't shoot for a perfect process the first time**
- **Get team consensus**





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Use the Process

- Use the process for an extended period of time
- Collect issues related to the process as they arise
- Reassess how you are doing after using the new process
- Continuously improve, as needed

Contact Information

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Questions?

