Designing Your Tailoring Approach to Help Achieve Higher Levels of Maturity

SEPG Conference 2006

March 6-9, 2006

Diane Mizukami (Williams)
Diane.Mizukami@ngc.com
Northrop Grumman
Agenda

• What is Tailoring
• A Typical Organization
• A Mature Organization
• Designing Your Tailoring Approach
• Analyzing Tailoring Metrics
• Making Improvements
What is Tailoring?

Adapt the organization's standard processes to meet the project’s objectives to arrive at the project’s defined process. Like a family tree, all defined processes must be derived from the same trunk.
Where is Tailoring in the CMMI?

- GP 3.2: Collect Information
- GP 2.1: Policies
- GP 2.2: Planning
- GP 2.3: Resources
- GP 2.4: Responsibility
- GP 2.5: Training
- GP 2.6: Configuration Management
- GP 2.7: Stakeholders
- GP 2.8: Monitor and Control
- GP 2.9: Evaluate
- GP 2.10: Higher-Level Review

Defined Process

Generic Practice 3.1
GP 3.1 Establish a Defined Process

Establish and maintain the description of a defined process.

Subpractices

1. Select from the organization's set of standard processes those processes that cover the process area and best meet the needs of the project or organizational function. \[GP\, P14.2, \text{Sub}P101\]

2. Establish the defined process by tailoring the selected processes according to the organization's tailoring guidelines. \[GP\, P14.2, \text{Sub}P102\]

3. Ensure that the organization's process objectives are appropriately addressed in the defined process. \[GP\, P14.2, \text{Sub}P103\]

4. Document the defined process and the records of the tailoring. \[GP\, P14.2, \text{Sub}P104\]

5. Revise the description of the defined process as necessary. \[GP\, P14.2, \text{Sub}P105\]

Tailoring Guidelines

Tailoring a process makes, alters, or adapts the process description for a particular end. For example, a project establishes its defined process by tailoring from the organization's set of standard processes to meet the objectives, constraints, and environment of the project. "Tailoring guidelines" are used in CMMI models to enable organizations to implement standard processes appropriately in their projects. The organization's set of standard processes is described at a general level that may not be directly usable to perform a process. Tailoring guidelines aid those who establish the defined processes for projects. Tailoring guidelines cover (1) selecting a standard process, (2) selecting an approved life-cycle model, and (3) tailoring the selected standard process and life-cycle model to fit project needs. Tailoring guidelines describe what can and cannot be modified and identify process components that are candidates for modification.

Copyright 2006 Northrop Grumman Corporation
Storyboard of a Typical Organization

1. Create Standard Processes
   - Develop policies and standard processes in Word

2. Post Standard Processes
   - Provide Word files to projects

3. Go Into Hibernation
   - Wait for the next process initiative

4. Update Years Later
   - Update policies and standard processes years later
Storyboard of a Mature Organization

1. Create Standard Processes
   - Develop policies and standard processes in a tool

2. Post Standard Processes
   - Provide the tool to projects

3. Let the Tool Gather Metrics
   - Walk away knowing the tool will automatically gather metrics

4. Improve Standard Processes
   - Use the metrics, to improve the policies and standard processes regularly

5. CMMI Level
Storyboard of a Typical Organization
Trying to Become More Mature

1. Collect Defined Processes
   Collect Word files from projects

2. Figure Out What Was Tailored
   Analyze red revision bars in every Word file

3. Waste Resources
   Waste an enormous amount of money and time

4. Improve Standard Processes
   Use the error-prone method to improve the policies and standard processes regularly

Copyright 2006 Northrop Grumman Corporation
6 Steps to a Mature Tailoring Approach

1. Define Goals-Questions-Measures
2. Define Tool Requirements
3. Define Tailoring Options
4. Design Tailoring Tool
5. Analyze Metrics
6. Improve the Standard Processes
### Define Goals-Questions-Measures

<table>
<thead>
<tr>
<th><strong>Goals</strong></th>
<th><strong>Questions</strong></th>
<th><strong>Measures</strong></th>
</tr>
</thead>
</table>
| - Continually improve the policies  
- Continually improve the standard processes  
- Create an efficient tailoring process | - Which policies are being waived?  
- Which processes are being tailored frequently?  
- How long is it taking projects to tailor?  
- Is a particular process troublesome for projects? | - Hours  
- Number of waivers, deviations, etc. for policies  
- Number of additions, deletions, etc. for standard processes  
- Categorize above by project type, project size, etc. |
Define Tool Requirements

1. Should the tool generate the defined process?
2. How will the tool handle updates to the standard processes?
3. Will the same tool also be used by the organization?
4. Should the tool display by CMMI levels?
5. Should the tool also be used for audits?
6. Should we use Excel, Access, Oracle, Web?
Include detailed definitions of the tailoring options in your Tailoring Guidelines.
**Design Tailoring Tool**

<table>
<thead>
<tr>
<th>924 Risk Management</th>
<th>Selection</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5 Handle Risks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>020</td>
<td>Applicable</td>
<td></td>
</tr>
<tr>
<td>030</td>
<td>Original</td>
<td></td>
</tr>
<tr>
<td>030</td>
<td>Modified</td>
<td>Risk handling options are defined in the Risk Management Plan.</td>
</tr>
<tr>
<td>010</td>
<td>Compliant</td>
<td></td>
</tr>
<tr>
<td>110</td>
<td>Applicable</td>
<td></td>
</tr>
<tr>
<td>001</td>
<td>Original</td>
<td></td>
</tr>
<tr>
<td>002</td>
<td>Modified</td>
<td>Plans must be written. Action items are not allowed.</td>
</tr>
<tr>
<td>150</td>
<td>Applicable</td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>Applicable</td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>Applicable</td>
<td></td>
</tr>
</tbody>
</table>

**Use any tool that can collect metrics**
Analyze Hours by Project Type

Variation analyzed through Six Sigma projects

Actions: Improve tailoring guidance and training to reduce variation, especially for service and Operations and Maintenance (O&M) projects. Publicize good examples.
Project compliance varies more since some projects do not have suppliers.

Project compliance varies the most on the policy unique to Mission Systems.

**Actions:** Improved the list of metrics in 926 Project Review Authority.
Actions: Identified potential improvements to the standard processes.
Analyze Hours by Project Size

This data also helps projects estimate the effort for tailoring -- helps managers recognize when they need assistance.

- **Large**: The standard processes are a better fit; therefore, tailoring is easier.
- **Medium**: Projects are struggling more with tailoring.
- **Small**: Projects gave up.

Data from 68 projects
A process step in the Integration (934) standard process was being tailored frequently. After investigating, it was discovered the process step was not what is normally done on projects, i.e., it wasn’t “standard” practice. The process step was deleted.

A stretch of process steps in the Risk Management (924) standard process was being tailored frequently. After investigating, it was discovered the process steps were way too detailed and not really “standard” practice. As a result, the standard process was changed to have projects define the details in their project plans.
Tailoring guidelines and criteria are critical. Provide very specific instructions. Never assume projects tailored correctly per the tailoring guidelines and criteria. Consider using the same tool as a policy compliance and process auditing tool.
High maturity organizations use quantitative management to improve their process assets.
Contact Information

- Diane Mizukami (Williams)
- Diane.Mizukami@ngc.com
- 310-921-1939
- www.NorthropGrumman.com