Designing Your Tailoring Approach to Help Achieve Higher Levels of Maturity

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Abstract 1132
Northrop Grumman Mission Systems

- A leading integrator of complex, mission-enabling systems
- 2003 Sales - ~$4.1B
- 18,000 employees in 50 states and in 23 countries
- 1500 active contracts
- Deep, legacy domain expertise in priority, high-growth segments
- Premier provider of mission critical end-to-end solutions

Focused on program performance
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 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
- GP 3.1: Defined Process
- GP 3.2: Collect Information

Make A Note

Generic Practice 3.1
GP 3.1 Establish 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. [GP14.1bP101]

2. Establish the defined process by tailoring the selected processes according to the organization's tailoring guidelines. [GP14.1bP102]

3. Ensure that the organization's process objectives are appropriately addressed in the defined process. [GP114.2aP102]

4. Document the defined process and the records of the tailoring. [GP114.2aP104]

5. Revise the description of the defined process as necessary. [GP114.2aP105]
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

CMMI Level 5
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 metrics, to improve the policies and standard processes regularly

5. **CMMI Level**
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

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

- Should the tool generate the defined process?
- How will the tool handle updates to the standard processes?
- Will the same tool also be used by the organization?
- Should we use Excel, Access, Oracle, Web?
- Should the tool display by CMMI levels?
- Should the tool also be used for audits?
Define Tailoring Options

Include detailed definitions of the tailoring options in your Tailoring Guidelines.
# Design Tailoring Tool

## Use any tool that can collect metrics

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<tr>
<td><strong>924 Risk Management</strong></td>
<td><strong>Selection</strong></td>
<td><strong>Rationale</strong></td>
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**4.5 Handle Risks**

- **020** Define candidate courses of action for handling each risk.
- **030** Assign risk handling options for each risk, per options defined in project plans.
- **040** Develop risk mitigation plans for the most important risks to the project as defined by risk management strategy. (CMN/12 RMSP 3.11) (PRM594.070)
- **100** Coordinate with task leads, the customer, and other potentially affected teams, as appropriate.
- **110** Assign an action item or write a plan for each risk to be mitigated.
- **120** Write a plan for each risk to be mitigated.
- **130** Scope of actions to be taken
- **140** Date to complete
- **150** Completion/success criteria
- **160** Results of mitigation actions
- **170** Schedule including impacts on master schedule
- **180** Affect on customer satisfaction when appropriate

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Risk handling options are defined in the Risk Management Plan.

Plans must be written. Action items are not allowed.
Analyze Hours by Project Type

Variation analyzed through Six Sigma projects

O&M project average time is higher

Service project variation is large

Project Type

Hours for Defining Compliance to Policies

Hours for Tailoring the Standard Processes

Actions: Improve tailoring guidance and training to reduce variation, especially for service and O&M projects. Publicize good examples.
Analyze Policy Compliance

Project Compliance with Policies

Test for Equal Variance (F-Test)

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 processes.
Metrics Available to Projects

This data helps estimate the effort needed to perform tailoring -- helps managers recognize when they need assistance.
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.

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.
Lessons Learned

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.

Top 3 Lessons Learned
Summary

High maturity organizations use quantitative management to improve their process assets

Post then Suffer to Improve

Post and Snooze

Choice 1

Choice 2

Choice 3

Post and Improve

CMMI Level 5