Teaching Continuous Risk Management Using A Requirements Management Tool

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Overview

• Risk Management Paradigm & Functions
• Risk Statement by Paradigm function
• Rational RequisitePro Requirements Tool
• RequisitePro Applied to Continuous Risk Management
Introduction

• Current risk management tools essentially capture and track risks early in a project’s life cycle but fall short of supporting the ongoing activities of tracking, mitigating and documenting the artifacts involved with the entire continuous risk management process.

• Apply a requirements management tool, RequisitePro [Rational, 2003] to a Continuous Risk Management (CRM) paradigm [Dorofee, 96].

• The requirement management Tool RequisitePro is designed to support the entire requirements management process throughout a project’s life cycle.
Risk Management Paradigm
Components of Risk Management - 1

Identify
- Search for and locate risks before they become problems

Analyze
- Convert risk data into useable information for determining priorities and making decisions

Plan
- Translate risk information into planning decisions and mitigating actions (both present and future), and implement those actions
Components of Risk Management - 2

Track
• Monitor risk indicators and mitigation actions

Control
• Correct for deviations from the risk mitigation plans and decide on future actions

Communicate & Document
• Provide information and feedback to the project on the risk activities, current risks, emerging risks, and Project Documents
# Risk Information Sheet

<table>
<thead>
<tr>
<th>RISK ID</th>
<th>Risk Information Sheet</th>
<th>Date Identified:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority</td>
<td>Risk Statement</td>
<td></td>
</tr>
<tr>
<td>Probability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Timeframe</td>
<td>Originator</td>
<td>Classification</td>
</tr>
<tr>
<td>Context</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Approach:** Research / Accept / Watch / Mitigate

**Contingency Plan and Trigger**

**Status**

**Lessons Learned**

<table>
<thead>
<tr>
<th>Approval</th>
<th>Closing Date</th>
<th>Closing Rationale</th>
</tr>
</thead>
</table>
Rational RequisitePro Requirements Tool

RequisitePro has the ability to:

- instantiate template documents
- track the progress of each individual risk taken from an information sheet
- track, watch, and mitigate risk, as a team evaluates risks activities
- maintain schedules and traceability of risks tracked, watched, or mitigated
- maintains this information in a user selected database
Requirement Management Tool Applied to Continuous Risk Management

Microsoft Access Risk Management Document Database
Requirements Management Tool Applied to Continuous Risk Management - Identify Risk Properties Dialogue Box - View
Requirements Management Tool Applied to Continuous Risk Management - Analyze Risk List Attribute Matrix

![Rational RequisitePro - CRM_Risk - [RISK: Risk Attribute Matrix]](image)

<table>
<thead>
<tr>
<th>Risk</th>
<th>Condition</th>
<th>Consequence</th>
<th>Difficulty</th>
<th>Likelihood</th>
<th>Potential Impact</th>
<th>Overall Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>RISK1: OOD</td>
<td>Condition</td>
<td>Consequence</td>
<td>Medium</td>
<td>Low</td>
<td>Unfortunate</td>
<td>Medium</td>
</tr>
<tr>
<td>RISK2: Object oriented development is a very...</td>
<td>Low</td>
<td>Annoying</td>
<td>Low</td>
<td>Medium</td>
<td>Unfortunate</td>
<td>Low</td>
</tr>
<tr>
<td>RISK3: The high-speed fiber optic data bus...</td>
<td>Low</td>
<td>Annoying</td>
<td>Low</td>
<td>Medium</td>
<td>Unfortunate</td>
<td>Low</td>
</tr>
<tr>
<td>RISK4: The project manager has a degree in...</td>
<td>Low</td>
<td>Annoying</td>
<td>Low</td>
<td>Medium</td>
<td>Unfortunate</td>
<td>Low</td>
</tr>
<tr>
<td>RISK5: Lack of a thorough hardware test...</td>
<td>Medium</td>
<td>Annoying</td>
<td>Medium</td>
<td>Medium</td>
<td>Unfortunate</td>
<td>Medium</td>
</tr>
<tr>
<td>RISK6: Project software schedule and resources...</td>
<td>Medium</td>
<td>Annoying</td>
<td>Medium</td>
<td>Medium</td>
<td>Unfortunate</td>
<td>Medium</td>
</tr>
<tr>
<td>RISK7: Lack of an adequate configuration...</td>
<td>Medium</td>
<td>Annoying</td>
<td>Medium</td>
<td>Medium</td>
<td>Unfortunate</td>
<td>Medium</td>
</tr>
<tr>
<td>RISK8: Resource availability estimates were...</td>
<td>Medium</td>
<td>Annoying</td>
<td>Medium</td>
<td>Medium</td>
<td>Unfortunate</td>
<td>Medium</td>
</tr>
<tr>
<td>RISK9: Waterfall lifecycle model is being used to...</td>
<td>Medium</td>
<td>Annoying</td>
<td>Medium</td>
<td>Medium</td>
<td>Unfortunate</td>
<td>Medium</td>
</tr>
</tbody>
</table>

This is the first time that the software staff will use OOD: The staff may have a lower than-expected productivity rate and schedules may slip because of the associated learning curve.
Requirements Management Tool Applied to Continuous Risk Management - Plan

Risk Mitigation Attribute Matrix
Requirements Management Tool Applied to Continuous Risk Management – Track

Mitigation Traced From Risk Matrix
Requirements Management Tool Applied to Continuous Risk Management - Control

Risk Actions Traced Into Risks
Summary

- The overall process flow for the continuous risk management paradigm was presented.
- Each stage of the paradigm was dissected and the activities inserted into a requirements management tool -- RequisitePro.
- RequisitePro is a powerful requirement tool, which was easily applied to risk management.
- The tool helps teams manage project risks comprehensively, promotes communication and collaboration among team members, and reduces project uncertainty.
- RequisitePro offers the power of documentation and a database linked to all items of a Project.
- A very important feature of RequisitePro is that, if any item in a View is changed, the associated items are simultaneously changed in all the other Project Package Views.
References

- The Software Engineering Information Repository (SEIR) https://seir.sei.cmu.edu/seir/