Getting to Level 3 Risk Management (#3772)

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Topics

Comparison of Level 2 and Level 3 Risk Management

Step by Step Approach to Level 3

The Desired Outcome

References

Questions

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Comparison of Level 2 and Level 3 Risk Management

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Level 2 Risk Management is a Snap

Level 2 Risk Management consists of:

- One Project Planning Specific Practice (PP SP2.2) – Identify Project Risks
- One Project Monitoring & Control Specific Practice (PMC SP1.3) – Monitor Project Risks
- Three pages of text

Because this is a Level 2 activity:

- The process used does not need to be defined and can be different for each project

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Level 3 Risk Management (RSKM) is an entire Process Area

Level 3 Risk Management consists of:

- Three Specific Goals with a total of 7 Specific Practices
- Twenty-two pages of text (more than the entire Project Monitoring & Control section)

Because this is a Level 3 activity:

- A defined process tailored from the organization’s process is required

Level 3 Risk Management requires a comprehensive risk management strategy

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RSKM Specific Goals and Practices

SG 1	**Preparation for risk management is conducted**
SP 1.1	Determine risk sources and categories
SP 1.2	Define the parameters used to analyze and categorize risks, and the parameters used to control the risk management effort
SP 1.3	Establish and maintain the strategy to be used for risk management

None of this was required for Level 2 risk management!

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RSKM Specific Goals and Practices (cont)

SG 2 Risks are identified and analyzed to determine their relative importance

SP 2.1 Identify and document the risks

SP 2.2 Evaluate and categorize each identified risk using the defined risk categories and parameters, and determine its relative priority

Except for having defined categories and parameters this is also required in Level 2 (PP SP2.2)

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RSKM Specific Goals and Practices (cont)

SG 3 Risks are handled and mitigated, when appropriate, to reduce adverse impacts on achieving objectives

SP 3.1 Develop a risk mitigation plan for the most important risks to the project, as defined by the risk management strategy

SP 3.2 Monitor the status of each risk periodically and implement the risk mitigation plan as appropriate

Level 2 only required the risk monitoring aspects of this goal!

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Risk management is not the same as worrying about your project!*

** Waltzing with Bears by DeMarco and Lister, p. 64*

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Is Level 3 Risk Management Worth It?

Level 3 Risk Management has many benefits:

- Helping new project teams perform adequate risk management
- Improving budget and schedule adherence
- Predicting an adequate risk reserve
- Managing risk rather than watching risks happen
- Identification of systemic organization issues that can be resolved by management
- Understanding the actual impact of risk on your projects
- Learning through shared, relevant experiences

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Step by Step Implementation Approach

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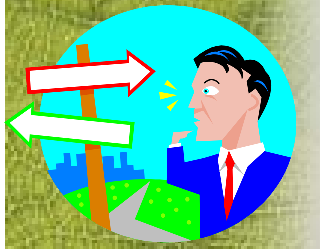

Where to Start

- Locate as much risk information from past projects as possible. If you are a Level 2 organization, you should have risk lists and monitoring records.
    - If you are not a Level 2 organization, and don’t have risk lists and monitoring records, it’s probably better to wait until you do.
- Why start with historic data?
    - If you don’t develop your risk management strategy based on actual experience, the end product may not be used because it is viewed as irrelevant.
- Select a relevant risk taxonomy for comparison

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About Risk Sources and Categories

- Risk sources describe potential places where risk originates
- Risk categories are buckets for grouping and analyzing risks so they can be dealt with effectively
- Risk sources and categories can facilitate thorough risk identification on all projects
- Thorough risk identification provides greater benefit to the project

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Step #1 - Identify Risk Sources

- Risk sources describe potential places where risks originate. They can be:
  - Internal to the project (for instance, the technology being used, a fixed schedule, complexity)
  - External to the project (for instance, weather, changing regulations, political instability of a country)
- Review each risk to identify its likely source(s)
- After you've identified common sources of risk from your data, look at other taxonomies to improve the thoroughness of your source list

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How Am I Going to Do This, Exactly?

One way to facilitate this process:

- ❑ Print historic risk information (risk statement, impact, mitigation plans, etc) on index cards or other similar sized physical media – you may need to select a sample subset if too much data exists
- ❑ Use different stickers to identify potential sources
- ❑ Log the source for each sticker type
- ❑ Place stickers on the index cards as appropriate
- ❑ One index card can have multiple stickers!
- ❑ Review the list of sources for consolidation opportunities
- ❑ Get more than one person involved!

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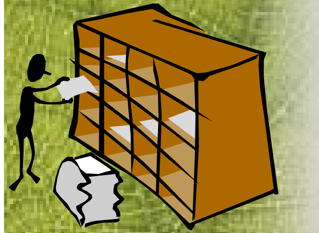
Step #2 – Identify Risk Categories



Risk categories are buckets for grouping and analyzing risks so they can be dealt with effectively. Often categories are just a higher grouping of sources from a taxonomy, but how else can categories be used?

- ❑ Phase of the life cycle in which the risk usually manifests
- ❑ Organizational group responsible for handling the risk (Senior Management, Systems Engineering, Project Management, etc)
- ❑ Internal or External to the organization
- ❑ What groups make sense in your organization?

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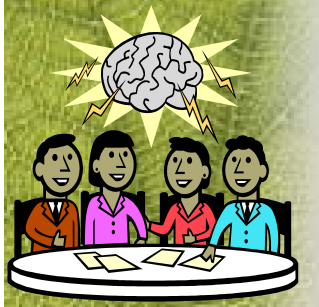
Step #3 - Define Risk Identification Methods



- ❑ Balance thoroughness with creative thinking by combining a structured method with brainstorming
- ❑ Involve appropriate stakeholders, not just the project team
- ❑ Structured methods can include:
  - ❑ Walking through the WBS
  - ❑ Walking through the requirements
  - ❑ Walking through the project plan
  - ❑ Walking through a list of risk sources or risk taxonomy
  - ❑ Reviewing historic risk data and lessons learned from similar projects

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Step #4 – Adopt Risk Statement Standards

- People often confuse issues, problems, and risks
- A risk is an event or condition that may occur in the future, and which will have an impact on the project if it did occur
- An issue is a risk that has already occurred, nothing can be done to prevent it
- A problem might have no project impact
- A standard risk statement format helps everyone identify and describe risks consistently:
  - If {condition present} then {impact}
  - If {event} then {consequence}

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Step #5 - Clarify Impact and Probability Definitions

- Tailor impact definitions to your organization based on historic data:
  - Impact includes more than just schedule and budget, it could include safety, quality, security, employee morale, or customer satisfaction
  - Safety issues could cause minor injury to one individual or serious injury to a large number of individuals
  - Security issues can range from disclosure of individual personal data to issues of national security
- Probability can be described using quantitative or qualitative values:
  - In either case, define and agree upon the meaning of these values in your organization

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Step #6 - Define Standard Triggers and Thresholds

- ❑ What standard thresholds are important?
  - ❑ Are some risk categories more critical than others?
  - ❑ Do projects with a higher (or lower) than average level of risk require a different approach?
  - ❑ Will projects with certain levels of risk simply be dismissed?
  - ❑ What is the priority, impact or probability cutoff for risks that must consider mitigation?
- ❑ What standard triggers are important?
  - ❑ Does the occurrence of a high priority risk trigger involvement of certain levels of management?
  - ❑ Does the identification of a new, high priority risk trigger specific action?

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Step #7 - Define Risk Responses

- There are many risk responses besides mitigation and contingency, including transferring, avoiding, monitoring and possibly even ignoring! What risk responses are valid in your organization?
- When is each risk response appropriate? Provide guidance, not just options
- Which risks will have responses developed? Which will just be monitored? Which will be ignored?
- Define the expected activities associated with each risk response (for instance, accept versus ignore)
- Review historic data to identify risk responses that have worked in the past

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Step #8 - Define Cost-Benefit Calculation Method

- Every risk does NOT need a mitigation plan!
- Sometimes mitigation is just too expensive. Consider:
  - The effort required to implement the mitigation
  - The likely reduction in probability and impact of the risk as a result of the mitigation
  - Weigh the total cost of mitigating against the projected impact of the risk should it occur
- Establish a minimum threshold for when mitigation should even be considered, for instance, only risks with at least Medium probability and Medium Impact

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Step # 9 - Document the Risk Management Strategy

A Risk Management Strategy :

- ❑ Is a comprehensive risk management approach for a project tailored from an organizational standard
- ❑ Translates organizational risk management expectations into a project-specific strategy, including:
  - ❑ Project-specific risk sources, categories, tools, measures, thresholds
  - ❑ Risk tolerance of the project sponsors
  - ❑ Overall approach to dealing with risk on the project
- ❑ Can be part of a risk management plan and a subset of the overall project plan which needs to be reviewed with the project stakeholders

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Step #10 - Identify Performance Measures

- ❑ What do you need to know about risk management?
  - ❑ Are we spending too much or too little effort on risk management?
  - ❑ How well are we estimating probabilities and impact?
  - ❑ How many problems occurred during the project that could have been anticipated as risks?
  - ❑ How well are we characterizing overall project risk?
  - ❑ How effective are our risk responses?
  - ❑ How effective is our risk reserve allocation and usage?
- ❑ Will these measures enable you to monitor and control the risk management process?

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Step #11 - Develop and Deliver Training

Tailor your training to the various stakeholders in the process:

- ❑ Customers need to understand their involvement and what risk related information they will be seeing
- ❑ Senior Management needs to know how to support the process and what their role is
- ❑ Project Managers need in-depth training on all aspects of the process
- ❑ Analysts, Designers, Developers, Engineers, Testers, Support Personnel need the ability to recognize and report risks to the appropriate individuals

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Step #12 – Perform Quality Assurance

Implement process and product quality assurance:

- Develop a checklist for verifying the risk management process is followed
- Identify risk related work products (such as risk lists), determine which should be audited and develop standards to evaluate them against
- Incorporate these activities into your process and product quality assurance plans

Step #13 – Address Generic Goal 2

Some Level 2 Generic Practices may already be addressed for Risk Management via Project Planning and Project Monitoring and Control, but consider:

- ❑ Do your policies include expectations specific to risk management? (GP2.1)
- ❑ Are there new risk management planning tasks that need to be scheduled and assigned? (GP2.2, GP2.4)
- ❑ Are new tools and job aids being introduced? (GP2.3)
- ❑ Are there new risk work products that projects need to maintain under configuration management? (GP2.6)
- ❑ Is the expected involvement of all stakeholders in the risk management process defined (including Senior Management)? Is there a way to track and monitor their involvement? (GP2.7, GP2.10)

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Step #14 – Address Generic Goal 3

To address Generic Goal 3, you should:

- ❑ Document the risk management process and provide tailoring guidance
- ❑ Provide a mechanism to collect the outputs of each project's risk management process for future reference
- ❑ Provide a mechanism for individuals and teams to provide feedback and improvement suggestions based on their usage of the risk management process

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What RSKM Implementation Looks and Feels Like

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Typical RSKM Activities and Behaviors

In an organization that has implemented CMMI-based RSKM processes, you could see these activities and behaviors:

1. Senior Management reviews the risks before approving project plans
2. Risk reserves are allocated and monitored
3. All team members can identify risks
4. Risk identification is encouraged and rewarded
5. Serious consideration is given to analyzing risks, developing and monitoring risk responses

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Typical RSKM Work Products and Artifacts

In an organization that has implemented CMMI-based RSKM processes, you will typically see these work products and artifacts:

1. Risk Registers (Lists)
2. Risk Strategies
3. Risk Status Reports
4. Risk Measures
5. Risk Source and Category Lists

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Risk References

The following references may be useful:

1. A Guide to the Project Management Body Of Knowledge (PMBOK®) Third Edition, Project Management Institute, for more information visit www.pmi.org
2. Continuous Risk Management Guidebook, Software Engineering Institute, for more information, see www.sei.cmu.edu/publications/books/other-books/crm.guidebk.html
3. Waltzing with Bears, Managing Risk on Software Projects, Tom DeMarco and Timothy Lister

The companion paper for this presentation includes additional references and is on the Conference CD

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Contacts and more information

- Susan Byrnes, PMP
  Natural SPI, Inc
  e-mail: susan@naturalspi.com
- Natural SPI's web site: www.naturalspi.com

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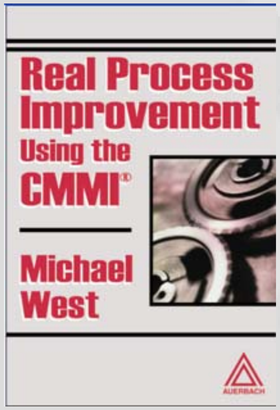

Real Process Improvement Using the CMMI®

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