

AFCEA InfoTech 2007
Project Management Topics



Risk and the Project Manager

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Outline

- What is Project Risk?
- Where Can We Find Risk?
- Risk Management Planning
- Risk Identification



What is Project Risk?

- Chapter 11 of **A Guide to the Project Management Body of Knowledge – Third Edition** defines Project Risk as:
 - “An uncertain event or condition that, if it occurs, has a positive or a negative effect on at least one project objective, such as time, cost, scope or quality.”



Where can we find Risk?

- Internal and External to the Project
- Partial List:
 - Budgets/Funding
 - Schedules
 - Scope or requirements changes
 - Integration
 - Personnel Issues
 - Hardware/Software
 - Contracting Actions
 - Political Concerns



Risk Management Planning: Inputs

- Enterprise Environmental Factors
- Organizational Process Assets
- Project Scope Statement
- Project Management Plan



Risk Management Planning: Tools and Techniques

- Planning Meeting and Analysis



Risk Management Planning: Outputs

- Risk Management Plan
 - Methodology
 - Roles and responsibilities
 - Budgeting
 - Timing
 - Risk categories
 - Culture, Age of Team, Technology, etc.
 - Definitions of risk and impact



Risk Identification: Inputs

- Risk Management Plan
- *Project Planning Outputs
- **Risk Categories
- Historical Information
- Data Security

* Project Planning Outputs include the project charter, the WBS, cost and time estimates, assumptions and constraints and the procurement plan

** Risk Categories may include technical, quality, performance, project management, organizational and external risks

Risk Identification: Tools and Techniques



- Documentation Reviews
- Information gathering
 - Brainstorming
 - Delphi technique
 - Interviewing
 - Root Cause Analysis
 - Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis
- Checklist Analysis
- Assumption Analysis
- Diagramming Techniques
 - Cause-and-effect diagram
 - System Process flow charts
 - Influence diagrams



Risk Identification: Outputs

- Risk Register
 - List of identified risks
 - List of potential responses
 - Root cause responses
 - Updated risk categories



Qualitative Risk Analysis

- Methods for prioritizing the identified risks for further action
 - Quantitative Risk Analysis
 - Risk Response Planning

Quantitative Risk Analysis: Inputs



- Organizational Process Assets
- Project Scope Statement
- Risk Management Plan
- Risk Register
- Project Management
 - Project schedule management plan
 - Project cost management plan



Qualitative Risk Analysis: Tools and Techniques

- Risk Probability and Impact Assessment
- Probability and Impact Matrix
- Risk Data Quality Assessment
- Risk Categorization
- Risk Urgency Assessment



Qualitative Risk Analysis: Outputs

- Risk Register
 - Relative ranking or priority list of project risks
- Risks grouped by category
- List of risks requiring response in the near-term
- List of risks for additional analysis and response
- Watchlists of low priority risks
- Trends in qualitative risk analysis results



Quantitative Risk Analysis: Tools and Techniques

- Data Gathering and Representation Techniques
 - Interviewing
 - Probability distributions
 - Expert judgment



Quantitative Risk Analysis and Modeling Techniques

- Sensitivity analysis
- Expected monetary value analysis
- Decision tree analysis
- Modeling and simulation



Quantitative Risk Analysis: Outputs

- Risk Register (Updates)
 - Probabilistic analysis of the project
 - Probability of achieving cost and time objectives
 - Prioritized list of quantified risks
 - Trends in quantitative risk analysis results



Risk Response Planning

- “Process of developing options, and determining actions to enhance opportunities and reduce threats to the project’s objectives. It addresses the risks by their priority, inserting resources and activities into the budgets, schedule and project management plan, as needed.”



Risk Response Planning: Inputs

- Risk Management Plan
- Risk Register



Risk Response Planning: Tools and Techniques

- Strategies for Negative Risks or Threats
 - Avoid
 - Transfer
 - Mitigate
- Strategies for Positive Risks or Opportunities
 - Exploit
 - Share
 - Enhance
- Strategy for Both Threats and Opportunities
 - Acceptance
- Contingent Response Strategy



Risk Response Planning: Outputs

- The Risk Register (Updates)
- Project Management Plan (Updates)
- Risk-Related Contractual Agreements



Risk-Monitoring and Control

- “Process of identifying, analyzing, and planning for newly arising risks, keeping track of the identified risks and those on the watchlists, reanalyzing existing risks, monitoring trigger conditions for contingency plans, monitoring residual risks, and reviewing the execution of risk responses while evaluating their effectiveness.”



Risk Monitoring and Control: Inputs

- Risk Management Plan
- Risk Register
- Approved Change Requests
- Work Performance Information
- Performance Reports



Risk Monitoring and Control: Tools and Techniques

- Risk Reassessment
- Risk Audits
- Variance and Trend Analysis
- Technical Performance Measurement
- Reserve Analysis
- Status Meetings



Risk Monitoring and Control: Outputs

- Risk Register (Updates)
- Requested Changes
- Recommended Corrective Actions
- Recommended Preventative Actions
- Organizational Process Assets (Updates)
- Project Management Plan (Updates)



Summary

- “Project Risk Management includes the processes concerned with conduction risk management planning, identification, analysis, responses, and monitoring and control on a project; most of these processes are updated throughout the project. The objectives of Project Risk Management are to increase the probability and impact of positive events, and decrease the probability and impact of events adverse to the project.”



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