Project Risk Management
Efficiency Notes – Risk Series

What It Is

A process for identifying, assessing, and mitigating risks to scope, schedule and cost on a project. Risks come in the form of opportunities and threats and are scored on probability of occurrence and impact on project.

Why You Need It

Risk Management is 1 of 10 Knowledge Areas in the Project Management Body of Knowledge (PMBOK®) which a Project Manager must understand to get the Project Management Professional (PMP®) certification.

What You Need

1. A Risk Management Plan
   Defined process agreed upon by stakeholders

2. Identify Risks – Risk Capture Form
   A way to efficiently capture identified project risks and add to Risk Register

3. Risk Register – Log Risks
   A log of identified risks and their status

4. Qualitative / Quantitative Analysis Tools
   Methods for analyzing / evaluating risks

5. Risk Response / Mitigation Plan
   Determine if Risk is acceptable or not based on assessment and plan for mitigation

6. Control Risks
   Assess effectiveness (risk audits) and improve

Risk Register - Example

Risk Identified	Probability	Impact	Action to Prevent / Manage Risk
Failure to retain key project staff	**Low**	**High**	Establish team with written commitment to timeline, ensure knowledge captured through project

Qualitative Assessment

Subjective evaluation of risk factors visualized in a matrix (heat map – see reverse) and prioritized based on probability and impact.

Rating scales are pre-defined.

Impact scales are tailored to the organization and the project objectives.

Quantitative Assessment

Objective numerical probabilistic assessment of impact and probability of risk factors.

There are many methodologies available:
• Critical Path Method
• Fault Tree Analysis
• Monte Carlo Simulation
• Sensitivity Analysis
• FMEA

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Probabilities and Impact Matrix (Heat Map)

Probability	Threats Risk Score = Probability x Impact					Opportunities High (RED) / Med (YEL) / Low (GRN)				
0.90 Very Likely	0.05	0.09	0.18	0.38	0.72	High	High	High	Med	Low
0.70 Likely	0.04	0.07	0.14	0.28	0.56	High	High	Med	Med	Low
0.50 Possible	0.03	0.05	0.10	0.12	0.40	High	High	Med	Low	Low
0.30 Unlikely	0.02	0.03	0.06	0.12	0.24	High	Med	Med	Low	Low
0.10 Very Unlikely	0.01	0.01	0.02	0.04	0.08	Med	Low	Low	Low	Low
	0.05	0.10	0.20	0.40	0.80	Very High	High	Med.	Low	Very Low
Example Impact Definitions – May Be Tailored to Each Project Objective Impact on an Objective (e.g. Cost, Schedule, Scope, Quality)										

Risks on the log are scored to determine impact on the project and what (if anything) needs to be done to mitigate and control that risk.

Evaluated risks with a mitigation / control plan are logged on a Risk Response Matrix

HIGH = Severe and likely to happen

MEDIUM = Moderate risk; impact is not so severe

LOW = Low risk of occurrence, low project impact if it does occur

Mitigation

Objective is to reduce the probability and/or consequences of a risk event to an acceptable threshold and define appropriate response.

Questions To Ask:
- What are the available options?
- Tradeoffs (cost / benefit) of each option?
- Impacts of current decisions on options?

Mitigation actions may be costly / time consuming; actions are balanced against priority level of the risk.

Organizations transfer risk where possible.

Low-risk factors may be recognized but absorbed as a matter of policy.

Risk Response Matrix

Risk Event	Response	Contingency Plan	Trigger	Responsible
Equipment Malfunction	**Mitigate:** vendor change **Transfer:** warranty	Replace	Failure	J. Smith

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