

Ch. 5: Creating the Project Risk Plan

Project risk management is "the process of conducting risk management planning, identification, analysis, response planning, and monitoring and control on a project."

1. When should the project risk plan be created?

2. What do you think a project risk plan should include?

3. **Six-step Process:** (to establish the project risk plan)

Step 1) Make a List - formal brainstorming session to identify threats and highlight what can go wrong

a) Why should the entire project team be involved in this session?

b) Why should further research regarding the risks be conducted (e.g., contact subject matter experts (SMEs), etc.)?

c) Why should care be taken to identify all types of risks?

Steps 2 and 3) Determine the Probability of Risk Occurrence and Negative Impact - prioritize risks to determine how much time, effort, staff, money should be devoted to prevent or mitigate each. Ask the questions:

- How probable is it that each risk will become a reality? Often rated: High (H), Medium (M) or Low (L)
- If the risk becomes a reality, how badly will it damage the project?

d) Why should input from the entire project team and consultations from appropriate subject matter experts (SMEs) be used to answer these questions?

e) Which aspects (budget, schedule, resource utilization, scope, etc.) of the project should be considered when ranking the negative impact of each risk?

Sample Product of steps 2 and 3:

<u>Risk</u>	<u>Probability</u>	<u>Impact</u>		<u>Risk</u>	<u>Probability</u>	<u>\$ Impact</u>		<u>Total</u>	
A	M	L		A	5	x	5K	=	25K
B	M	M	or	B	6	x	4K	=	24K
C	L	L		C	2	x	1K	=	2K
D	H	H		D	10	x	9K	=	90K
E	L	H		E	1	x	40K	=	40K

f) Could a table similar to the one on the right focus on schedule impact or resource utilization instead of cost?

Step 4) Prevent or Mitigate the Risk - some risks can be prevented and some can be mitigated

g) Which of the following risks can be prevented or mitigated?

- Natural disaster (e.g., wild-fire, hurricane) effecting team's corporate office
- Unreliable supplier for a part

Step 5) Consider Contingencies - *contingencies measures* - specific actions that will be taken if the risk occurs; *preventive measures* (steps taken before the risk becomes a reality)

h) If acceptance testing for a supplier's widgets has been identified as a Medium risk and a test failure occurs, then what might be a contingency?

i) Why might a High probability and High impact risk have several contingencies?

j) Why might a Low probability and Low impact risk have no contingencies?

k) Why should a Low probability and High impact risk have contingencies?

Step 6) Establish the Trigger Point - *trigger point* is the point at which the risk becomes enough of a reality that the project manager needs to trigger the contingency

l) The trigger should be a specific point in time or defined range of time. What happens if the trigger point is set too soon?

m) What happens if the trigger point is set too late?

Contingency Reserves - are designated amounts of time and/or budget to account for risks to the project that have been identified and actively accepted.

Management Reserves - designate amounts of time and/or budget included in your plan to account for risks that cannot be predicted.

4. If a project has a lot of R & D and similar projects are typically 10% over budget, then the overall project budget should be increased by 10%. Is this a contingency or management reserve?

5. *Program* - involves multiple projects working toward completion of the same deliverable. Not uncommon for project manager to be leading multiple projects (i.e. their *portfolio*). A manager with several projects must:

- create a risk plan (6 steps) for each project individually, and then
- create a portfolio/project risk plan (6 steps) by identifying where the projects coincide or overlap, called *coordination points*, and determining what might go wrong at these points

Suppose you are a project manager for an aircraft manufacture which has a “design a new plane” program. You are responsible for two projects: Design Wing project and Design Engine project. Can you identify any coordination points and associated risks?

Risk Matrix - useful tool when managing many risks across multiple projects that allows you to color code individual risks as they apply to each project.



6. How is color coding individual risks going to help risk management?

Risk Register/Risk Log - useful tool in managing actions taken regarding accepted risks to the project (Figure 5-2)

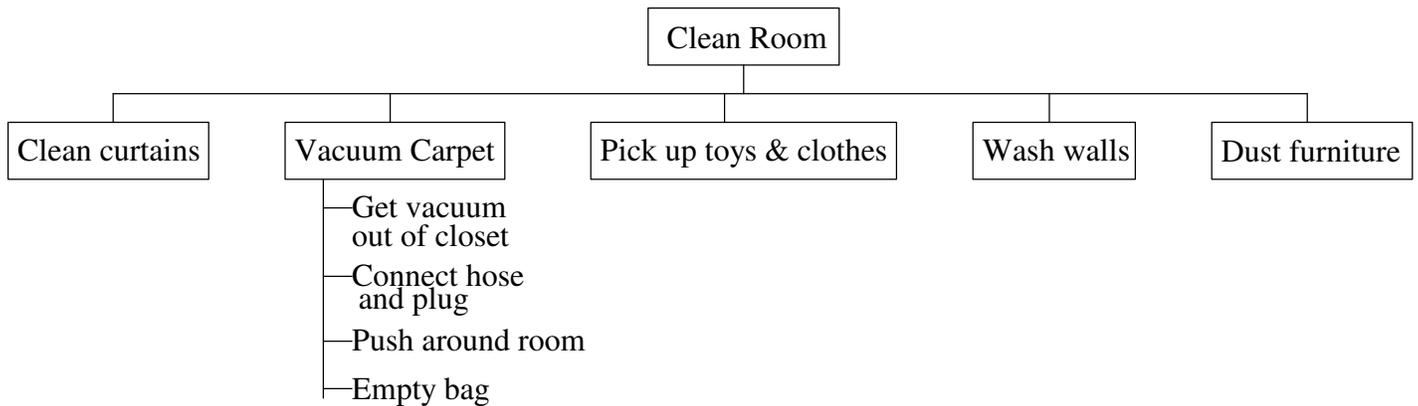
ID	Risk	Outcome/Response	Owner	Prob.	Impact	Active

Risk register helps track risk status as your project matures through the life cycle by identifying ownership of contingency implementation, outcomes of actions taken, and active and inactive risks.

Ch. 6 Using the Work Breakdown Structure (WBS) to Plan a Project - subdivide a complicated task into smaller tasks until you reach a low enough level to do an estimate of the desired time and cost accuracy

7. Why is it easier to estimate the duration and cost for each small task than for higher-level tasks?

8. The text has a WBS to clean a room. Identify subtasks for another task similar to the Vacuum carpet task.



9. Typical WBS has 3 to 6 levels (i.e., program, project, task, subtask, work package, level of effort) with a maximum of 20 levels for really large program.

a) Why should you not worry about sequencing tasks in WBS?

b) Why would we expect the WBS to not be symmetrical (i.e., all paths not going down to the same level)?

Uses of the WBS:

- Good way to graphically portray the scope (complexity and magnitude) of a project.
- Assign each task to be performed to a particular person who will be responsible for its completion. Record in a *linear responsibility chart* (Figure 6-4).
- Estimating time, costs and resources:

10. Why should we consider who is actually performing a task when making time and cost estimates?

11. You can base an estimate of historical data or a mental model (imagine how long it would take). Why is historical data best?

12. Author uses averages for task estimates because a serial of averages should “average out”. Parkinson’s law (i.e., work expands to fill the time allowed) indicates that tasks may take longer than estimate, but rarely less. What characteristics of human nature support Parkinson’s law?

13. Why is it important to not penalize people for performing better than the target?

14. Guidelines for estimating includes:

- show percentage of tolerance that are likely to apply
 - tell how estimate was made and what assumptions were made
 - specify any factors that might affect the validity of the estimate (e.g., whether estimate is still valid in 6 months)
- a) How do the above help explain the estimate to others?

b) How does following the above help protect you if the project fails?

15. *Consensual estimating* is a technique where:

- have at least 3 people independently estimate each activity in the project that they know something about
 - have them meet to discuss their estimates and arrive at a *consensus* estimate they all can support
- a) How does consensual estimating protect an individual from an inaccurate estimate?

b) Why is a consensual estimate likely to be more accurate than an estimate from an individual?

c) How does consensual estimating help an inexperienced person learn from an experienced person?

16. To improve estimating ability, why is it important to track actual time required for a task and compare it to the estimated time?