



Module 6

Risk and Progress Management

Learn methods to minimize the probability that risk will occur and the severity of risk should it arise.

Explore risk and progress management as a process, which will help clarify the big picture of this project management style.

Learning Outcomes

1. Define risks and risk management.
2. Evaluate the steps of risk management.
3. Evaluate lessons learned from risk management and risk process.
4. Assess the project management role and impact in risk management.

Readings

- Lecture
- Chapters 8 & 9 in *Engineering project management*
- Project Management Institute. (2017). Part 1: A guide to the project management body of knowledge (PMBOK® guide): 11. Project risk management. In *A guide to the project management body of knowledge® (PMBOK® guide)*. (6th ed.). (pp. 395-458). PMI Publications.

Lecture

▼ What is risk management?

It is the process of identifying problems.

▼ Why use risk management?

To characterize events that might occur and cause a project to fail.

▼ What are some examples of risks to be managed?

The lack of available resources (technology, maturity of products, gaps in knowledge), the scale of a project, and even the behavior of the systems engineers and other stakeholders can all be risks that could potentially derail or cause issues with the project.

▼ How to mitigate risk?

Use engineering activities to solve the problem.

It requires individuals actively working to ensure that risk doesn't come to fruition.

▼ What are specified risk statements?

These risk statements help identify the risk, what the risk would do if it is realized, and the effect that it would have on the project.

▼ What is an example of a standardized template for risk statements?

Due to [cause], [Risk event] may occur during [specified time window]. This could lead to [impact statement] with an effect on [specified project objective].

▼ What are effects?

Effects are the changes that result from a consequence of an action or other cause

(e.g., multiple change requests because the customer doesn't know what they want)

▼ What are causes?

Causes are the people or things that give rise to an action, phenomenon, or condition

(e.g., animal nesting grounds preclude the ability to build in a specified area)

▼ What are impacts?

Impacts are the actions that have a direct effect or influence on a process

(e.g., failure to adhere to guidelines could cause us to be fined).

▼ What are areas of risk?

Areas of risk are issues of compliance, finance, or physical risk manifested within a unit or organization

(e.g., supply chain delivery that causes a delay in the manufacture of electronic components)

▼ What are events?

Events are when something of importance takes place within the organization during the project management period

(e.g., the organization could fail to meet guidelines that would remove their certification and cause a project cancellation)

▼ What is a SWOT analysis?

strengths, weaknesses, opportunities, and threats

▼ What can you do if you understand the cause of a risk?

you can initiate preemptive action to prevent or reduce the probability of impact for such a realized risk

▼ What can you do if the risk is tied to a specific event?

appropriately identify things that are symptomatic of the event occurring

Then, you can take planned action to minimize, reduce, or even evade the probability of impact for the event taking place

▼ What can you do when risk identification is done?

you can ensure that project objectives and the work breakdown structure stay on schedule.

▼ What is a risk matrix?

This tool assigns a level of severity to a risk. Typically, these come in matrix sizes of 3×3, 4×4, and 5×5.

		Severity of Risk		
		Negligible	Moderate	Critical
Probability of Risk	Plausible	Medium	High	High
	Occasional	Low	Medium	High
	Implausible	Low	Low	Medium

▼ What is negligible risk?

the potential risk factor can be easily controlled and manipulated or would result in a less-than-minor injury, illness, or damage to potential system

▼ What is moderate risk?

the potential risk factor can often cause moderate-to-severe injuries, illnesses, or system damage requiring immediate corrective action by staff

▼ What is critical risk?

the potential risk factor can often cause death or major system loss requiring immediate termination of the activity or operation

▼ What is a risk register?

Register that allows for the risk owners to act in the event that a potential risk is actualized

▼ What is an assumption log?

The log is for the identification management and monitoring of assumptions and constraints that affect the project, including the risks associated with a particular stakeholder.