



Risk Management: Tools, Techniques, and Challenges

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PMI Nashville Symposium

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Objectives

1. Review the project risk management process.
2. List challenges that exist in the project risk management process.
3. Apply project risk management tools and techniques (risk register).

Project Risk Management: Overview

- Project risk management provides a structured means to identify and manage risks within projects.
- The goal of project risk management is to “increase the probability and impact of positive events and decrease the probability and impact of negative events in the project” (Project Management Institute, 2009, p. 4).

Project Risk Management: Overview

- Risks can represent threats as well as opportunities.
- Project risk management is one of the 13 PMI knowledge areas.
- Activities occur across the Planning, Executing, and Monitoring & Controlling process groups.

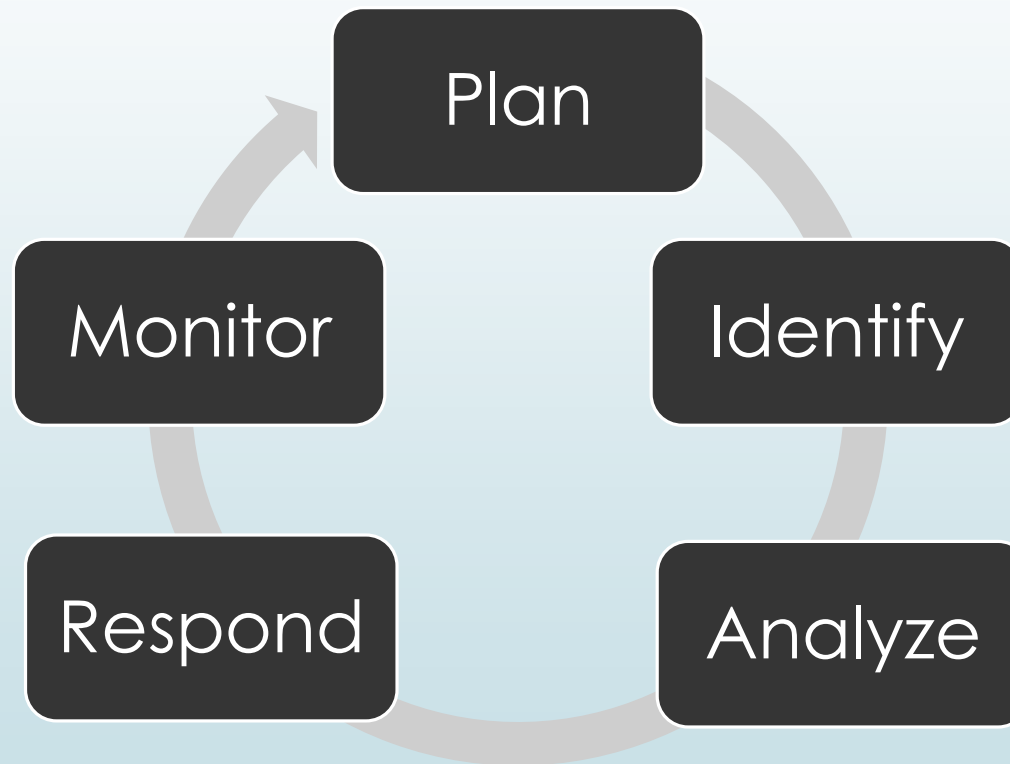
Project Risk Management: Rationale

- Increases the probability of project success
- Proactively creates the right solution the first time
- Reduces surprises/problems/crises
- Minimizes “reactive” project management practices

Project Risk Management: Defined

- Project risk: “An **uncertain** event or condition that, if it occurs, has a **positive** or **negative** effect on one or more project objectives” (PMI, 2017, p. 720).
- Uncertain = may happen, could happen
 - If it will happen or is happening, it is likely an issue - not a risk.
- Positive = an opportunity (for the project or the organization)
- Negative = a threat (to the project or the organization)

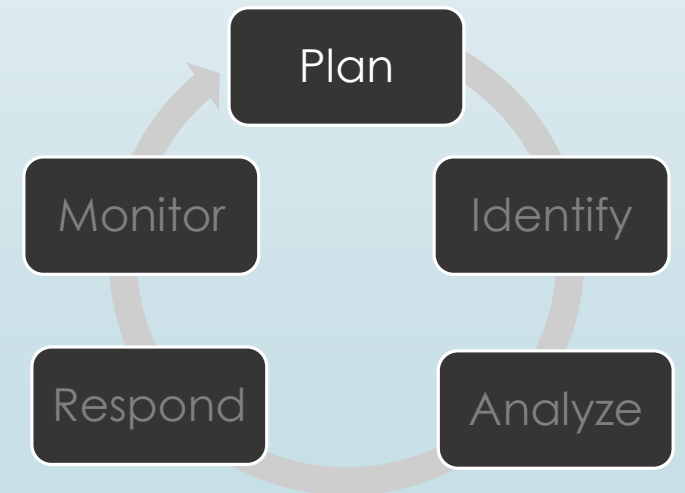
Project Risk Management: Process



Project Risk Management: Process

Plan

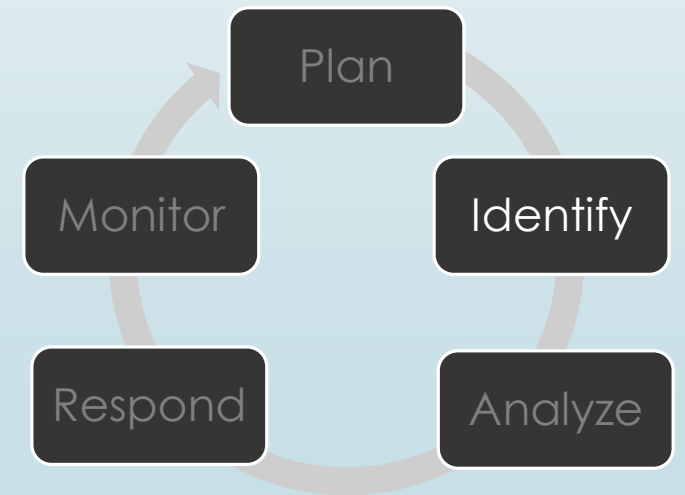
- ▶ A risk management plan should be defined early in the project and in consultation with the project team.
 - ▶ May be part of the project management plan or exist as a separate document
 - ▶ Risk management methodology (process, tools, templates)
 - ▶ Stakeholder risk tolerance
 - ▶ Attitudes toward risk: avoid, tolerate, embrace, expect, re-interpret



Project Risk Management: Process

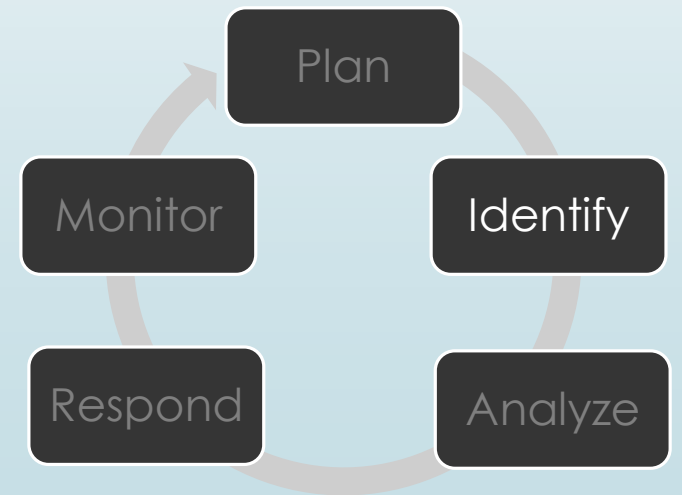
Identify

- Techniques
 - Brainstorming, Delphi Technique, Cause and Effect Diagram, Risk Breakdown Structure (RBS)
- Categories
 - Technology
 - Legal
 - Reputational
 - Environmental
 - Execution
 - PMBOK process groups



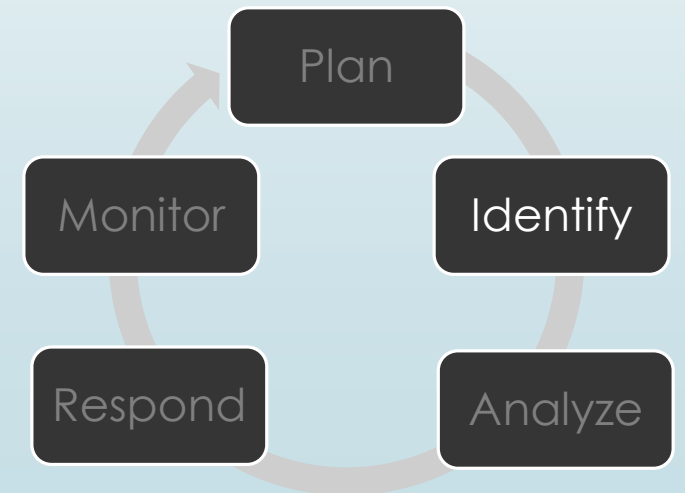
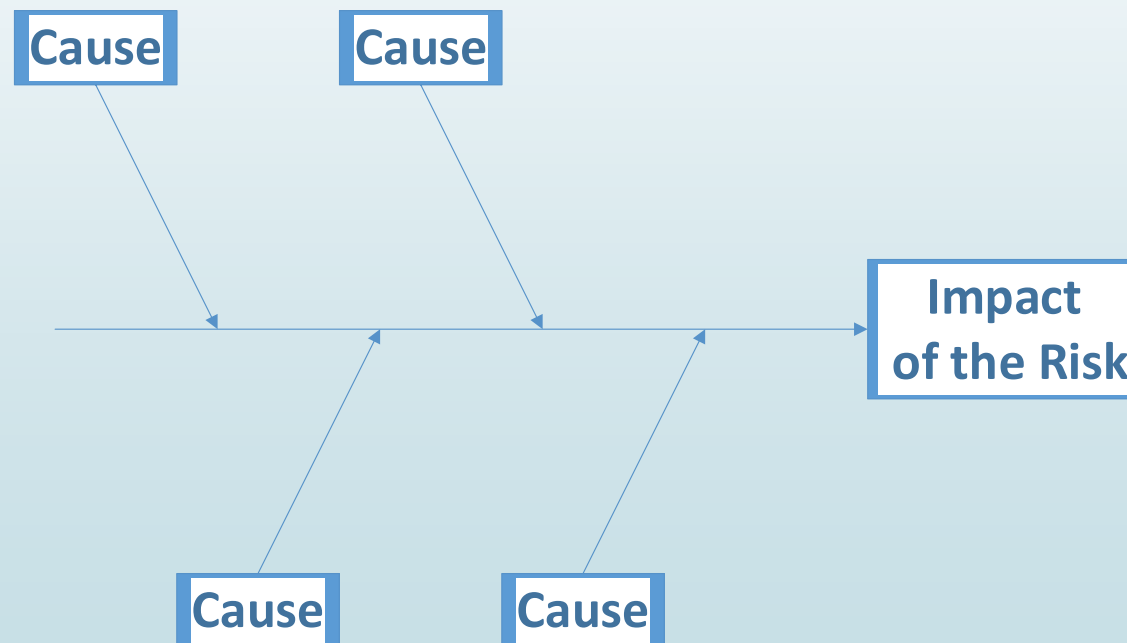
Project Risk Management: Process

- ▶ Brainstorming
 - ▶ Group technique
 - ▶ All ideas are valuable (one often leads to the next)
- ▶ Delphi Technique
 - ▶ Experts respond in writing
 - ▶ Responses compiled to reach consensus
- ▶ Risk Breakdown Structure (RBS)
 - ▶ Similar to WBS
 - ▶ Break down risks by category
- ▶ Cause and Effect Diagram



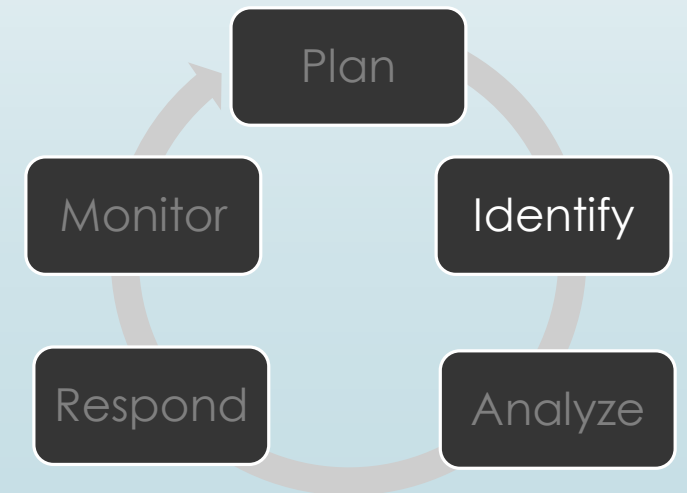
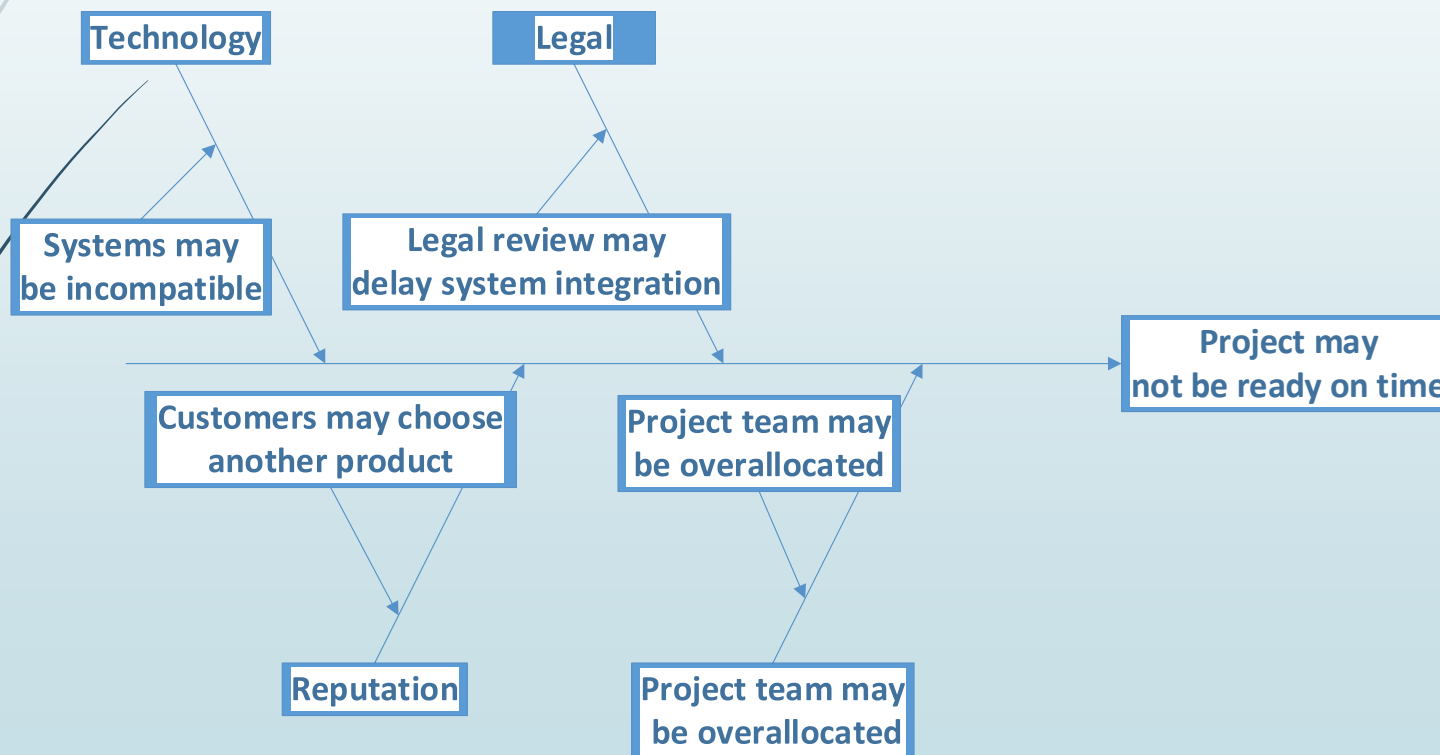
Project Risk Management: Process

- Cause and Effect Diagram
 - Fishbone/Ishikawa Diagram



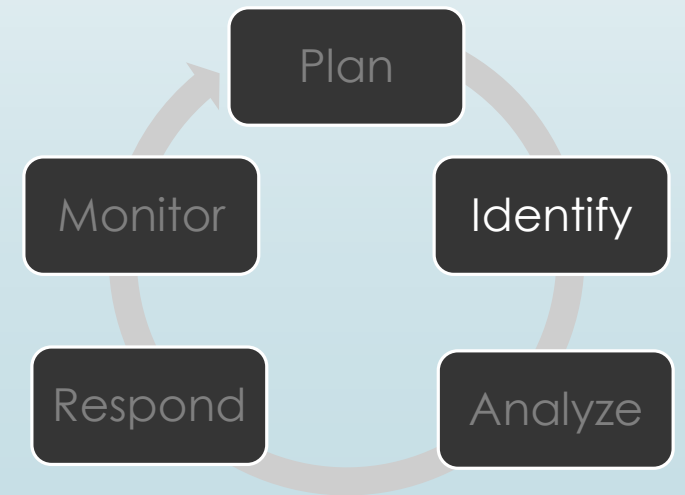
Project Risk Management: Process

- Cause and Effect Diagram
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Project Risk Management: Process

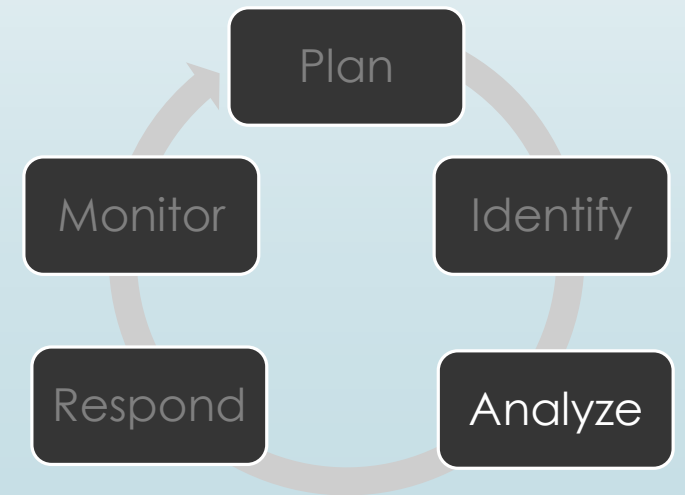
- ▶ Writing risk statements
 - ▶ Due to [some cause], an [uncertain event/condition] may occur, which could lead to [a consequence to project objectives].
 - ▶ Due to a **lack of awareness of the mentoring program, we may not secure enough mentors, which could limit the number of mentor/mentee pairs.**
 - ▶ Cause = lack of awareness
 - ▶ Condition = not securing enough mentors
 - ▶ Consequence = limited number of pairs



Project Risk Management: Process

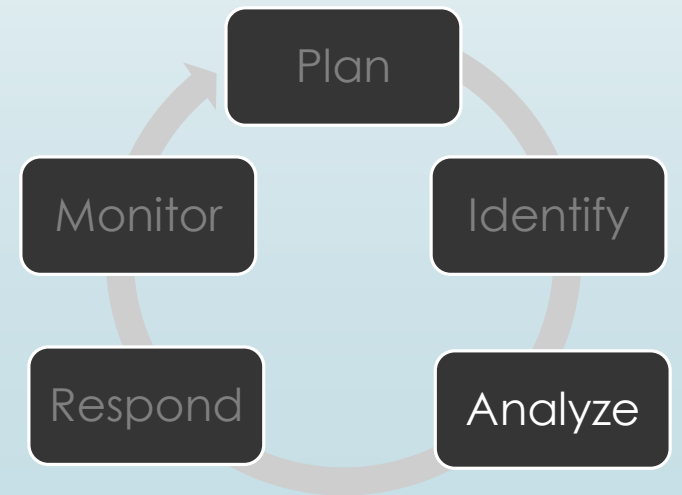
Analyze

- Select appropriate qualitative risk analysis tools.
 - Example: Risk probability and impact assessment (recorded in the risk register)
- Adapt tools to fit the project's scope, size, criticality.
- Perform qualitative risk analysis.
- Select highest priority risks that may need to undergo quantitative risk analysis.
- Update the risk management plan.
- Update the risk register.



Project Risk Management: Process

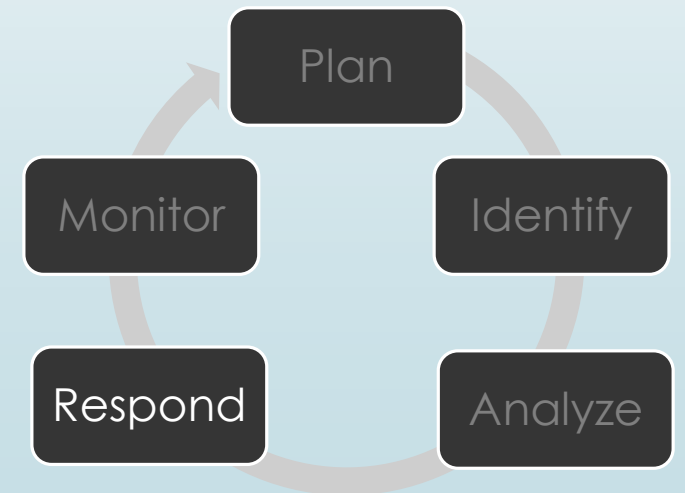
- ▶ Consider...
 - ▶ Time, resources, expertise
- ▶ Qualitative risk analysis determines priorities.
- ▶ Quantitative risk analysis determines the magnitude of impact of risks and provides basis for determining reserves.
 - ▶ Reliable data is necessary to perform quantitative risk analysis.



Project Risk Management: Process

Respond

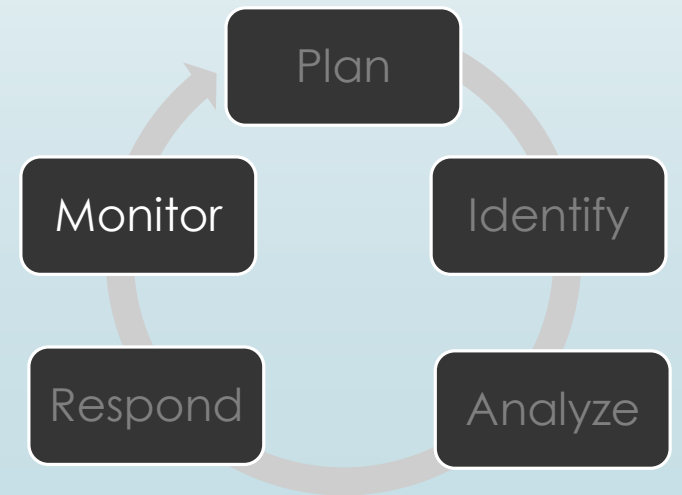
- Avoid
- Exploit (opportunities)
- Transfer
- Mitigate
- Accept
- Escalate



Project Risk Management: Process

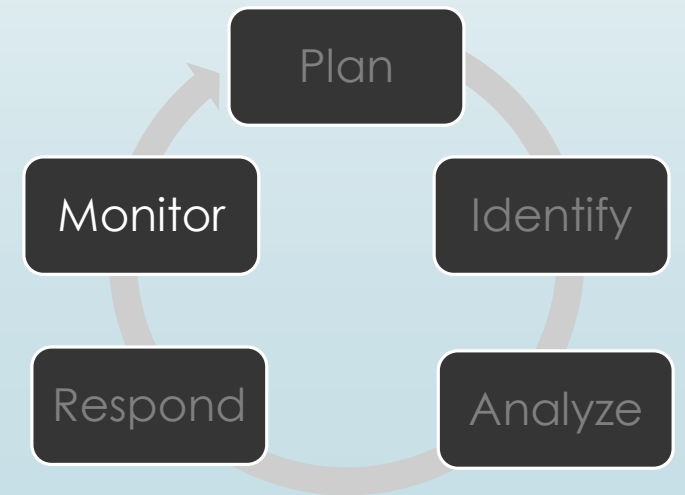
Monitor

- Monitor project progress.
- Look for triggering events.
- Implement response plans.
- Evaluate the effectiveness of response plans.
- Re-assess the risk to determine if additional response plans are needed.



Project Risk Management: Process

- ▶ Remember... As risks are realized, they may become issues that result in changes to the project.
- ▶ Making changes to the project introduces additional risks.



Project Risk Management: Challenges

- Failure to discuss risk-related lessons learned to determine the frequency of risks, which responses work (or don't), and the effort needed to manage project risks (Hillson, 2015)
- Failure to see the risk management process as iterative (Hillson, 2015)
- Lack of a risk management plan
- Not getting to the cause of the risk (focusing on the impact instead)
- Stakeholders are not involved in the risk management process or kept informed of risks that may need their attention

Project Risk Management: Challenges

- ▶ Risk identification is limited to execution risks without considering other risk categories
- ▶ Risk register is not used or updated
- ▶ Risk response plan is not integrated with the project management plan
- ▶ Thinking: “It is out of my control. There is nothing I can do.”

Project Risk Management: Apply

In this part of the session, participants will practice completing a risk register.

Review and Reflect

1. Reviewed the project risk management process.
2. Listed challenges that exist in the project risk management process.
3. Applied project risk management tools and techniques (risk register).

References and Suggested Reading

References:

- Hillson, D. (2017). *Managing risks in projects*. doi <https://doi.org/10.4324/9781315249865>
- Project Management Institute. (2017). *A guide to the project management body of knowledge* (6th ed.). Newtown Square, PA: Author.
- Project Management Institute (2009). *Practice standard for project risk management* (2nd edition). Newtown Square, PA: Author.

Suggested Reading:

- Meredith, J. R., Mantel, S. J., Shafer, S. M., & Sutton, M. M. (2017). *Project management in practice* (6th ed.). Hoboken, NJ: Wiley.
- Pritchard, C. L. (2015). *Risk management: Concepts and guidance* (5th edition). Boca Raon, FL: Taylor & Francis Group.

Thank you!

What questions do you
have?