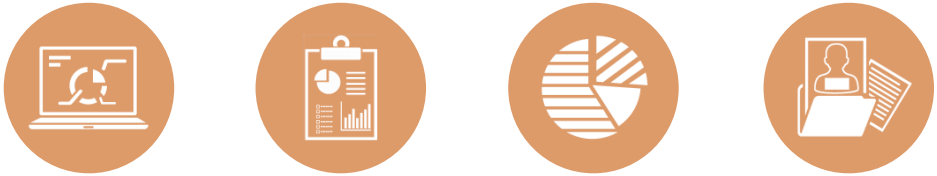
PMI®—Agile Certified Practitioner (PMI-ACP)®

Agile Risk Management

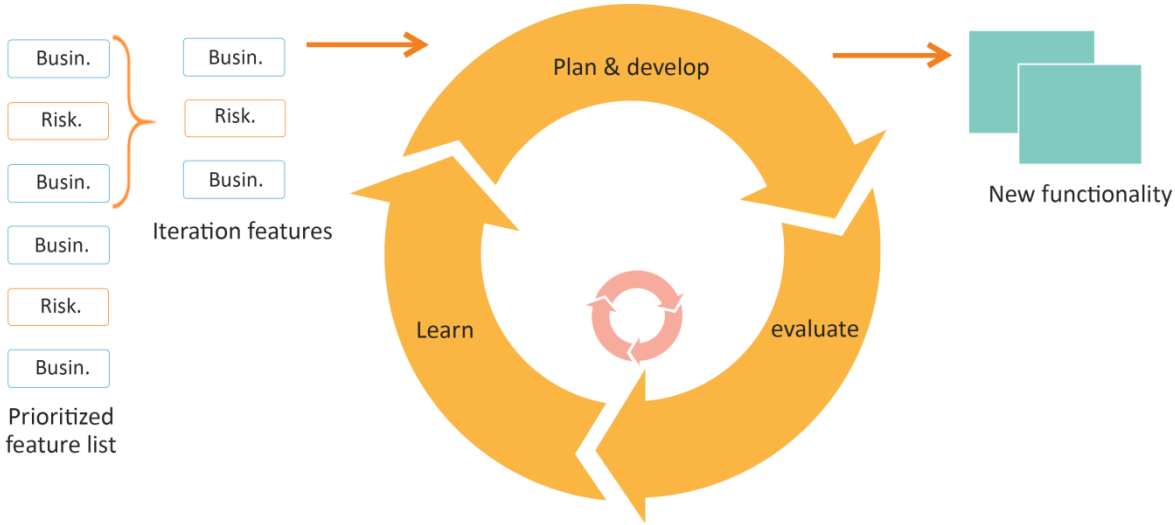


Objectives

After completing this lesson, you will be able to:

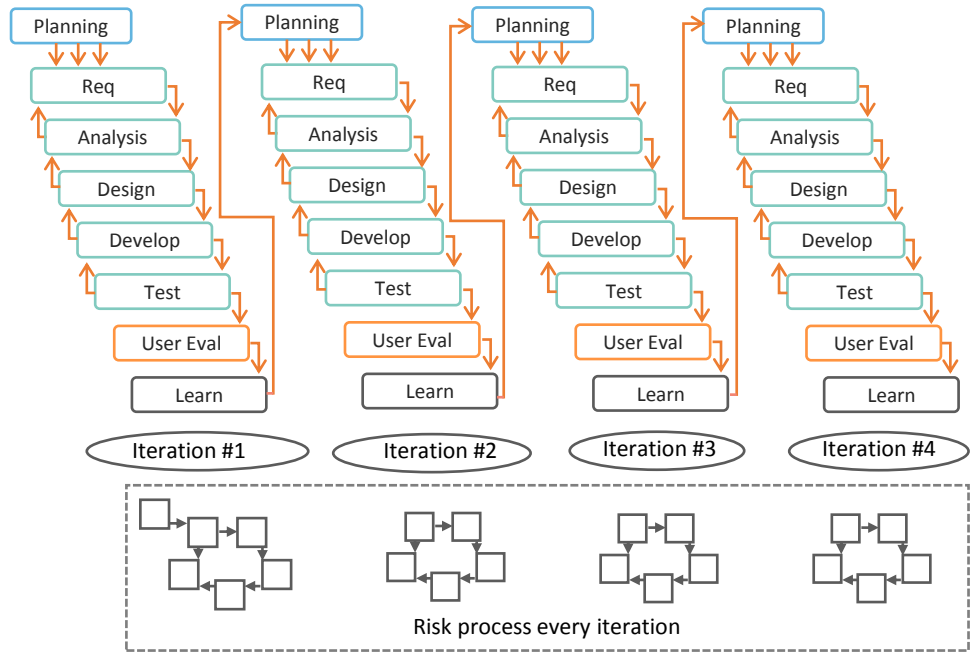
- Explain risk adjusted product backlog in Agile
- Identify the steps involved in Agile risk management
- Describe various risk identification, assessment, response and review strategies
- List the steps in progressive risk reduction
- Determine the use of Agile risk-based spike

Risks are managed in Agile projects by associating user stories to themes and ensuring that risks are prioritized early in the project's iterations. The goal of each iteration should be to progressively 'de-risk' the project.



Risk Management in Agile (contd.)

The risk management process is repeated every iteration. As part of the iteration retrospective, the remaining risks can be reviewed and the probabilities and impacts validated. The team can be asked to identify new risks. The remaining features that continue to carry risk would be identified for selection in the next iteration.



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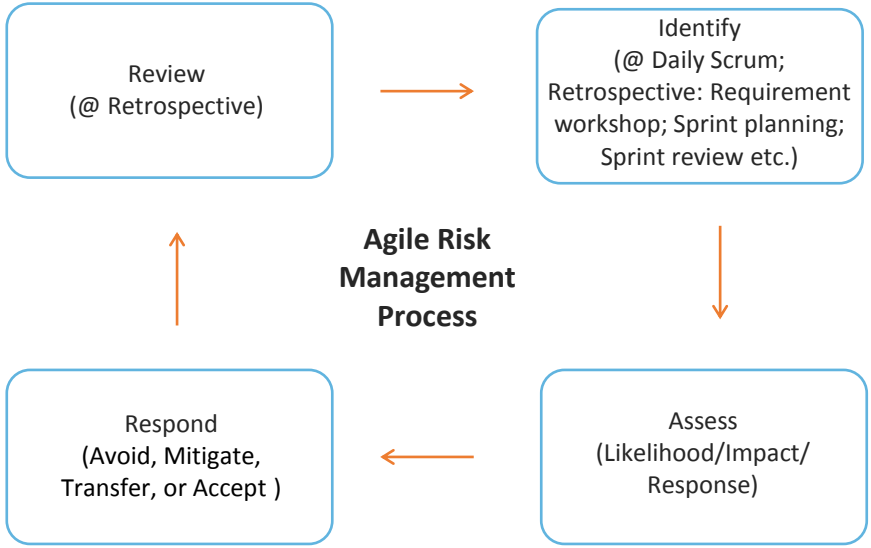
Risk Adjusted Product Backlog

Risk involved with a feature is an important factor in the prioritization of the product backlog.

- The product backlog is continually reviewed and adjusted.
- The customer, along with an analyst and other team members, prunes the backlog.
- While pruning, impact (risk) analysis is the key: items are broken down, analyzed for their interdependencies, shifted up or down in priority, re-estimated, removed, and reallocated to iterations or releases. This happens weekly in most Agile teams.
- Analyzing the impact of changing requirements should be a routine among successful Agile teams.

The four steps in risk management cycle are:

- Risk Identification
- Risk Assessment
- Risk Response
- Risk Review



Risk Identification

The team identifies project risks and records them in a risk register or spreadsheet. Risk identification is done using information gathering techniques such as checklists, document reviews, and assumption analysis.

Risk Identification Opportunities

Risk identification can happen at the following stages:

Requirement Gathering	Team and the product manager discuss new ideas to reconsider and adjust requirements in a way that maximizes value and minimizes risk.
Planning Poker	Team estimates the relative size of each user story to reduce risk by rejecting user stories that are over a certain size.
Iteration or Sprint Planning	Team identifies, assesses, and responds to risk. Team works with the product manager to maximize output, thereby reducing the risk of failure.
Scrum Meeting	Team identifies risks and issues. The risks are added to the risk board and the agreed response plan is documented.
Iteration or Sprint Review	Team discusses risks. Successful mitigation or evasion activities are highlighted and shared with the stakeholders too.
Retrospective Meeting	Team discusses risks handled successfully, the chances of reoccurrence of risk and what will be done differently for risk mitigation in the subsequent iteration or sprint.

Risk Assessment—Categories

Classifying risks can serve as a checklist for identifying risks.

A broad categorization could be:

- Business risk
- Technological risks
- Logistical risk

To ensure that a broad range of risks have been identified, the acronym given can be used:

P	Political
E	Environmental
S	Societal
T	Technological
L	Legal
E	Economic

A risk census is a simple framework for analyzing the risk exposure of a project.

- It describes each risk;
- It provides an estimate of how likely the risk is to occur (risk probability);
- It indicates the impact to the schedule if the risk did occur; and
- It identifies the expected exposure to the risk.

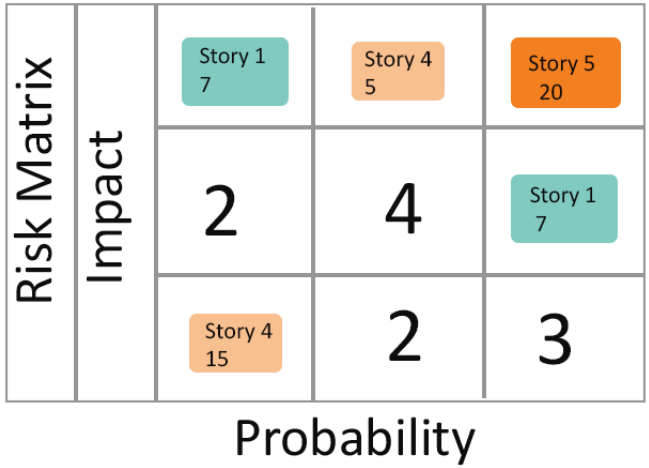
The total exposure can be used to determine how much slack or buffer is required in the project.

Risk	Probability	Impact (days of delay)	Exposure (Probability * Impact)
Required test bed server and software licenses may not arrive on time	30%	10	3
Complexity of the API's used may increase the effort required	50%	15	7.5
Platform team may not deliver a stable version in time	20%	25	12.5
Unexpected absence of team members during the flu season	40%	5	2
Total Exposure			25

Risk board is an information radiator that is used to make the risks of a project transparent to the team and the stakeholders. A risk board indicates the following:

- Identified risks
- Probability
- Impact
- Risk response (if applicable)

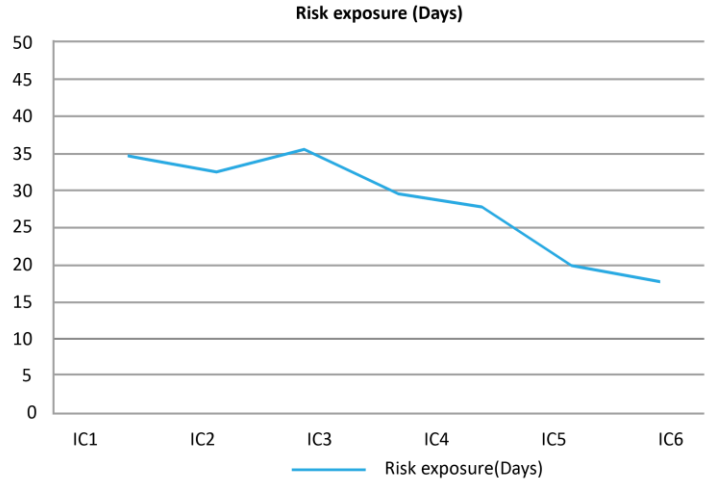
Risk board should be reviewed regularly as part of the daily Scrum and/or as part of the end-of-sprint or iteration retrospective.



Risk Burndown Chart

The risk burn down chart is a simple graphical indicator of the risk trends in the project.

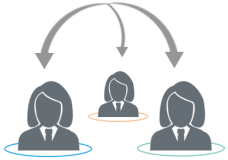
- The risk burndown chart is created by plotting the sum of the risk exposure values from the risk census against the remaining risks in each iteration.
- In the chart, there should be linear drop in risk over the course of the project.
- Each iteration should be de-risking the project by delivering a user story that mitigates or eliminates a risk on the risk board.



For every risk identified, it is important to have a strategy to respond to it:

Avoid
A project or a part of a project is cancelled in order to remove the threat of risk realization.

Mitigate
Reduces the impact of risk, if the event occurs.



Transfer
Most of the risk is transferred to a third party. The residual risk is handled using different strategies.

Accept
The team agrees to handle lower impact risk, when they arise.

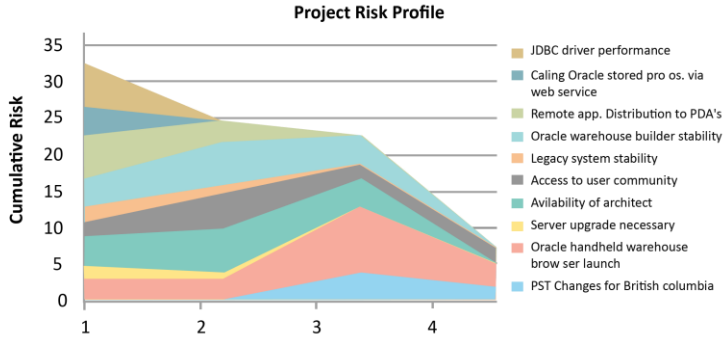
Risk review is the phase where the team meets for reviewing the risks.

- The active risks are reviewed to ensure that responses are delivered in a timely and efficient manner, generally done through the ‘daily scrum’. Actions and decision points are added to the risk board and reviewed everyday.
- The team needs to provide feedback on the risk management process to ensure that it is optimized as a part of the project retrospective.
- Review of the impact of risk and risk realizations on project and company objectives is conducted as part of the sprint or iteration planning activities.

Risk Profile Graphs

A risk profile graph is a more elaborate instance of the risk breakdown chart:

- Risk profile graphs are ‘stacked area graphs’ of risk severity. The risk severity scores for each risk are plotted one on top of another to give a cumulative severity profile of the project.
- Risk profile graphs inform stakeholders if the risks are moving in the right direction (downwards) or if issues and concerns are escalating (upwards).



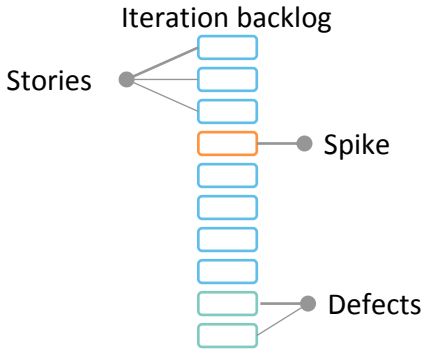
Progressive Risk Reduction

Steps to reduce the risk levels of a project are as follows:

Risk-Based Spike

Spike is a time-boxed period designated to reduce uncertainty by learning about a feature, technology, or process to better estimate, develop, or fix an upcoming feature or defect.

- A spike should require minimal time and effort; not more than one or two days.
- A spike should be made visible by creating a story for it in the product backlog.
- Spike should be used sparingly as they do not create story points themselves.



Quiz

QUIZ 1	Which of the following are the steps involved in risk management cycle, in the correct sequence?

a. Identify, Assess, Respond

b. Identify, Assess, Respond, Review

c. Review, Identify, Assess, Respond

d. Identify, Review, Respond, Assess

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c. Review, Identify, Assess, Respond

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Answer: b.

Explanation: Identify, Assess, Respond, Review are the steps involved in risk management.

QUIZ 2	What is a graph that shows the risk severity scores for each risk plotted one on top of the other to give a cumulative severity profile of the project?

a. Risk graph

b. Risk board

c. Risk profile graphs

d. Risk issue boards

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Answer: c.

Explanation: Risk profile graph shows the risk severity scores for each risk plotted one on top of the other to give a cumulative severity profile of the project.

QUIZ 3	Which of the following strategies seeks to reduce the impact of risk event if it occurs?

a. Avoid

b. Transfer

c. Mitigate

d. Accept

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b. Transfer

c. Mitigate

d. Accept

Answer: c.

Explanation: Mitigation seeks to reduce the impact of risk event if it occurs.

QUIZ 4	If the risk probability is 20% and size of loss is 5, what is the risk exposure?

a. 100

b. 5

c. 20

d. 1

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b. 5

c. 20

d. 1

Answer: d.

Explanation: Risk exposure is the product of probability and size of loss. Therefore, the risk exposure = 20% x 5 = 1.

QUIZ 5	What is the purpose of a spike?

a. An activity in an iteration intended to reduce uncertainty in a feature, technology, or process.

b. A significant increase in velocity from one iteration to another.

c. Adding extra stories to an existing iteration.

d. A story that requires an increase in its story points due to uncertainty in its underlying technology or process requirements.

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Answer: a.

Explanation: A spike is time-boxed period intended to reduce uncertainty by learning about a feature, technology, or process to better estimate, develop, or fix an upcoming feature or defect.

QUIZ 6	How do Agile projects manage risk?

a. Agile projects ensure that risks are associated to user stories and complete these stories early in the iteration schedule to de-risk the project.

b. Agile approaches inherently manage risk through test driven development.

c. Risk stories are added to the backlog and completed during the last iteration.

d. Total Exposure points are added to every story based on the risk census.

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Answer: a.

Explanation: By ensuring that risks are associated to user stories and completing these stories early in the iteration schedule, Agile approach de-risk the projects.

Summary

Here is a quick recap of what was covered in this lesson:

- Risks in Agile projects are managed by associating user stories to themes and ensuring that risks are prioritized early in the project's iterations.
- A risk census is a simple framework for analyzing the risk exposure of a project.
- Risk board is an information radiator that is used to make the risks of a project transparent to the team and the stakeholders.
- The risk burn down chart is a simple graphical indicator of the risk trends in the project.
- The four risk response strategies are avoid, mitigate, transfer, and accept.
- Risk profile graphs inform stakeholders if the project risks are increasing or decreasing.
- Spike is a time-boxed period designated to reduce uncertainty by learning about a feature, technology, or process to better estimate, develop, or fix an upcoming feature or defect.

THANK YOU