# RISK MANAGEMENT

Tackling Risks in Projects, Programs, and Portfolios





## o What is Risk Management

- Risk Management across Portfolios, Programs, and Projects
- o Risk Management Processes
- o Trends in Risk Management
- Next Steps: Consider the PMI-RMP Credential

## What is Risk

Management

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## What is Risk Management?

### • The goal of Risk Management knowledge is simple – **minimize surprises**.

- Maximize the value and gains from **positive** risks or **opportunities**
- Minimize the impact and occurrence of **negative** risks or **threats**

#### Let's analyze the key words

- Minimize Surprises Surprises are unexpected, unplanned, and sometimes astonishing events.
  - For example: Stock market occasionally experiences wild gyrations, in either direction. Some people may suffer financially while others may gain.
  - Effective project managers monitor the project closely and avoid surprises, especially surprises that are within project manager's reasonable realm of control.
- Positive risks These are opportunities and they are favorable events enhancing some aspect of project
  - For example: The price of steel, which is used in great volume on your project, has suddenly dropped due to reduction of global demand.
- Negative risks These are threats which may cause damage to your project
  - For example: The price of imported steel, which is used in great volume on your project, has suddenly increased significantly because your local currency became weaker. Thus, the cost increased for your project.

## What is Risk Management? (Continued)

- From a risk management perspective, all uncertainties, even positive ones, result in surprises.
  - Surprises are frowned upon, even when they are positive. For example, if the project manager can
    anticipate the drop in the price of steel, then the project can free up capital to be invested on other
    projects
  - "Surprises" reveal poor control and quality of project management, especially to executives who are impacted by the unexpected outcome
- We have multiple highly noticeable failures in recent years in the United States:
  - Great recession of 2007 as a result of poor financial management in the financial market
  - Failure of Obama Healthcare Website in October 2014
  - Numerous data breaches in the past year, resulting in exposure of millions of records of private information
- In everyday affairs, we tend to view risks as negative as they are uncertain. This
  presentation strives to present a balanced view in which risks are both positive and
  negative.

## Why Manage Risk?

## Would you prefer...



*Or*...



Risk Management is what we have been doing for years as successful PMs, but in a structured & rigorous manner.



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## **Risk Defined**

• A **Risk** is an **uncertain event or condition**, that if it occurs, has a positive or negative effect on at least one objective

#### • **Probability** × Impact = Risk Score

#### **Probability:**

The Likelihood of Occurrence That an Objective Will Not Be Met Using the Current Plan



#### Impact:

The Consequence of Occurrence of a Penalty Incurred If the Objective Is Not Obtained

#### ○ **Risk vs. Issue**

- A **Risk** is an event that may occur in the future
- A Problem or Issue is something that has already occurred and you are dealing with now

## The Triple Constraint (Iron Triangle): Scope, Time, Cost

- As more sides of the triangle (constraints) are fixed and unyielding, projects tend to become more challenging with greater risk.
- In general, only 2 of the 3 constraints can be selected for projects.



## Project, Program, and Portfolio Risk Management

 <u>Risk Management</u> is an organized, systematic decision-making process that efficiently

• plans,

- assesses,
- handles,
- monitors / controls, and

documents risk

to increase the likelihood of achieving project, program, and portfolio goals and decrease the likelihood that a risk would become a future problem

## Risk Classification: Identification vs. Occurrence



## Certainty of Occurrence

Source: Kim, S. D. (2012). Characterizing unknown unknowns. Paper presented at PMI® Global Congress 2012—North America, Vancouver, British Columbia, Canada. Newtown Square, PA: Project Management Institute.

## Examples of Risk

- o Unknown Known
  - The Glen Fell Tower fire in London killed at least 80 people. Analysis has shown that the lead cause of rapid fire was caused by flammable materials used as filler in the aluminum cladding. This is a known problem, but possibly unknown to the construction company (as the manufacturer may have hid the fact) and the occupant.
- o Unknown Unknown
  - I was the program manager for the Standard and Poor's Integrated Marketing Project.
  - The launch was on September 11, 2001, at 8:00 AM. The location was 55 Water Street, 37<sup>th</sup> floor, overlooking the World Trade Tower.
  - At 8:45 AM, the first plane hit the North Tower; at 9:03 AM, the second plane hit the South Tower.
  - The project experienced a delay of 4 months as we were not allowed to reenter the building.







## Example of Risks (Continued)

- o Known Known
  - This is project scope. Project managers and business analysts should use a variety of techniques to clearly define the requirements for the project.
- o Known Unknown
  - This is the classic risk category. Take diseases, we have always known that bacteria, virus, and other agents can affect us. Without proper containment and treatment, epidemics and even pandemic can result.
  - Today, Covid-19 has claimed over 20,000 deaths (on 3/25) and it will be heart breaking to provide an updated number by the time of this presentation.







## Pandemic – Coronavirus COVID-19 Global

Source: John Hopkins University: https://coronavirus.jhu.edu/



## Pandemic – Coronavirus COVID-19 United States



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## Benefits of Risk Management

Risk Management provides a capability to quickly and effectively **communicate** risk information up and down the management chain. Other important benefits include:

- Identifies existing as well as potential problems
- Common descriptions / understanding of risk
- ► Effective use of resources
- Identifies strategies to reduce the risks
- Maximizes safety of personnel
- Provides a structured and systematic review of the process
- Provides ongoing process for system improvements
- Provides continuous risk communication

Risk Management across Portfolios, Programs, and Projects

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## Portfolio, Program, Project Risk Management

#### • Risk Management has the lowest maturity of all the knowledge areas.

 Ibbs and Kwak study demonstrated that risk management has the lowest maturity rating (scale of 1 to 5). For example, in IT industry:

```
Scope: 3.25 • Communications: 3.21 •
Cost: 3.20 • Time: 3.03 • HR: 2.93 •
Procurement: 2.91 • Quality: 2.88 •
Risk: 2.75
```

 This shows that risk management is either ignored or at least under-invested in projects.

Why?

Source: Ibbs, C. William and Young Hoon Kwak. "Assessing Project Management Maturity," Project Management Journal (March 2000).

## Portfolio, Program, Project Risk Management (Continued)

## • Risks are genuinely difficult to manage because

- They require precious resources to identify, analyze, plan, and execute; frankly most project professionals have *real* issues and fires to manage
- They require *foresight* and *imagination* since by definition risk has not happened yet and can come from everywhere (and sometimes nowhere)
- Characteristically, this phenomenon of "everywhere and nowhere" is indicative that risks do not conform to standard organizational levels.
- For project professionals, risk shifts from one level of an organization to another, and manifests itself in multiple places and in multiples ways.

## Portfolio, Program, Project Risk Management (Continued)

Case Study: Company X decides to outsource its IT application development to save money and to leverage the larger pool of talented vendor resources.

• This is a strategic decision that impacts organizational capabilities and resources.

- For portfolio management, risk is now inherent in the capability and capacity of the organization. When portfolio managers plan for new projects, it is important to consider this risk and plan adequate controls.
- For program management, more attention is now required on scope and communication.
- For project management, vendor management is now more important.

## Portfolio, Program, Project Risk Management (Continued)

Say the project manager suspects that the vendor is *exaggerating* project progress and under reporting on major issues. How should the project manager deal with this?

- **Project:** If this vendor only works on this singular project, then the best action for the project manager is to confront the vendor and find resolutions.
- Program: If this vendor works on programs, then are there other projects impacted? Is this a more systemic issue with this vendor? Is the problem in their methodology?
- Portfolio: If this vendor works on multiple projects and programs in the portfolio, then a more comprehensive review across the portfolio involvement is important. For example, how does this impact vendor trust? Contracts?
- Strategy: If the risk becomes issues, then it will likely be managed at an executive level. In some worst cases, organizations reverse their outsourcing direction and in-source their functions.

## **Risk Appetite and Utility Curve**

For project professionals, it is important to understand an organization's risk appetite, as illustrated in the utility curve.

- A. Risk averse (or avoiding) money gain (or utility) rises at a decreasing rate
- B. Risk seeking utility rises at an increasing rate
- C. Risk neutral utility is proportionally balanced between utility and risk











- E(U(W)) Expected value of the utility (expected utility) of the uncertain payment;
- E(W) Expected value of the uncertain payment;
- U(CE) <u>Utility</u> of the certainty equivalent;
- U(E(W)) Utility of the expected value of the uncertain payment;
- U(W<sub>0</sub>) Utility of the minimal payment;
- U(W<sub>1</sub>) Utility of the maximal payment;
- W<sub>0</sub> Minimal payment;
- W<sub>1</sub> Maximal payment;
- RP Risk premium

Source: Wikipedia, Risk aversion

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## Risk Management Processes

- o What is Risk Management
- Risk Management across Portfolios, Programs, and Projects

## • Risk Management Processes

- Common Risk Management Challenges
- o Putting Risk Management to Work
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## Risk Management Processes

#### Identification

• Discovery of a potential risk

#### Assessment

• Review, analysis, and prioritization

#### Response Planning

• To mitigate, avoid, transfer or assume assessed risks

#### Implement Risk Response

 Of response strategies, as determined in response planning



- Planning, Monitoring, Documentation and Communication
  - Foundations of the RMP, essential to all phases
  - Part of continuous process improvement for the RMP

## **Risk Identification**

Any and all personnel on a project are responsible for identifying risks – it's an everyday part of the job

It is not necessary to resolve the risk at this stage – simply capture the potential problem

## Identification Methods

- Brainstorming
- Checklists
- Cost/Schedule Analysis
- Functional/Failure Analysis
- Interviewing Subject Matter Experts, etc.



## Risk Assessment (Analysis)

## Risk Assessment/Analysis

- What is the probability of the risk occurring?
  - Qualitatively (e.g., "high probability")
  - Quantitatively (e.g., "1 in 1000 chance")
- What is the impact if the risk occurs?
- Both Probability and Impact are determined
- These are plotted to determine the Risk Exposure

#### Generally uses a Probability and Impact Matrix



#### **Consequence of Occurence**

## Plan Risk Response

## Threat Risk Response Strategies (pre-event actions):

- **Mitigate:** Actions to reduce the probability or impact of a threat risk
- Avoid: Eliminate the risk-producing activity entirely by choosing an alternate approach.
- **Transfer:** Take actions that redistribute risk to another area. (This does not relieve the responsibility of tracking and closing the risk)

• Accept: Accept the risk as stated with no other action.

Opportunity Risk Response Strategies (pre-event actions):

- Enhance: Actions to increase the probability or impact of an opportunity risk
- Exploit: Drive the risk event to occur by changing its probability to 100%, or as close as possible.
- Share: Share risk ownership with an individual or group to influence the opportunity occurrence.
- Accept: Accept the risk as stated with no other action.

## Implement

## Execute response strategies, as determined during response planning.

## ► This includes:

- Mitigate, Avoid, Transfer, or Accept
- Enhance, Exploit, Share, or Accept



## **Monitor Risks**

## oMonitor, Track and Communicate Risk

- Track using the risk register
- Communicate this to management and stakeholders (internal and external)

## oUnderstanding and Prioritization of Risks

- Facilitate early response planning
- Minimize program issues

## Risk Planning, Monitoring, Documentation & Communication

## Elevation

• Elevate risks to the management level where they can be tackled

## Escalate

• Expedite critical risks to upper management for resolution

# Trends in Risk Management

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## Non-Event Risks

#### o Generally, when risk occurs, they are events.

• For example, the US declared a trade war with China by raising tariff. Company X producing goods and services that are negative impacted may decide to hold off from plant expansion.

#### o But there is also a general recognition that there are also non-event risks

- Variability risk Doubts or uncertainties about some important factors of an activity or decision. For example, in software development, interface coding especially with new languages and standards can behave in unpredictable ways. Or in a scientific project, how materials behave under extreme conditions is uncertain
- Ambiguity risk Doubts or uncertainties of the future. For example, the consequences of an U.S. initiated trade war is uncertain. Thus, the financial stock markets around the world is suffering due to the uncertainty.

## Emergent Risks

- Emergent risks are Unknown Unknown that has the additional properties of interactivity; plus even when there are signs, they are often insignificance at the earlier stage. But when these low significance factors interact, especially when they come together at an inopportune time, emergent risks can be significant.
  - Examples include 9/11 in the United States, global warming, social disorder, and Ebola disease.
  - In January 2020, when Coronavirus first emerged and only impacted Wuhan China, most of the world's government ignored it (to its detriment).
- Organizations have no easy path to tackle emergent risks. The only two good methods are:
  - Organizational resiliency Strengthening the organization, such as people, process, technology, more reserve funds, and other means to increase the flexibility and agility of the organization
  - Sense and sensemaking Increase both the flow and scope of information so the organization can improve its ability to monitor, analyze, and respond to information

## Governance and Risk Management

#### • We live in a risk-adjusted world.

#### • Every organization action (or inaction) has risk embedded

• The choice is either deliberate consideration or accidental

Environmental														
	Ente	Enterprise / Organizational												
		Business Unit / Departmental												
		Por	tfolio											
			Programs	Operations										
			Projects Specific Tasks & Activities											

## Governance and Risk Management (Continued)

- Risk savvy organizations learn to properly manage risks through its governance.
- Risk managers at all level of the organization should analyze risks and escalate them to the appropriate level for effective management
- A well-coordinated organization applies an integrated approach to managing risks with proper governance at each level



Next Steps: Consider the PMI-RMP Credential

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## **PMI-RMP Value**

- Highlight subject matter expertise and experience in project risk management
- Increase marketability to existing and potential clients and/or employers (differentiator)
- Demonstrate **commitment** to professional development and ongoing education
- Obtain PDU's to maintain your PMP credential

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myPMI	Membership	Certification	Professional Development	Get Involved	Business Solutions	PMBOK <sup>®</sup> Gu and Standar	ide Knowledge Is Center	Marketplace			
Home > Certification > PMI Risk Management Professional (PMI-RMP)											

# PMI Risk Management Professional (PMI-RMP)<sup>°</sup>

#### Ready to apply? Register and log in to get started.

PMI's Risk Management Professional (PMI-RMP)<sup>®</sup> credential is a solution to project management's increasing growth, complexity and diversity. Globally recognized and demanded, the PMI-RMP<sup>®</sup> fills the need for a specialist role in project risk management.

It recognizes your unique expertise and competency in assessing and identifying project risks, mitigating threats and capitalizing on opportunities, while still possessing a core knowledge and practical application in all areas of project management.

#### Who should apply

The risk management specialist role on project teams is becoming more important to an organization's success. Be an asset to your organization. Hone your basic project management skills and showcase your specialized expertise in minimizing risk to employers with the PMI-RMP credential.

#### **Quick Links**

- PMI-RMP Handbook
- PMI-RMP Printable Application Forms
- Certification Agreement
- PDU Activity Reporting Form
- Online CCR System (claim PDUs)
- Reference List
- Sponsor a Paper-Based Testing Event
- PMI-RMP Exam Content Outline
- PMI-RMP® Role Delineation Study (RDS) and Examination Update FAQ

**Reference:** PMI, "PMI Risk Management Professional (PMI-RMP)" Retrieved from: <u>http://www.pmi.org/en/Certification/PMI-Risk-Management-Professional-PMI-RMP.aspx</u>



## Who should apply:

- Risk Management Specialists and Project Managers
- To increase your skills in project management
- To highlight your specialized expertise to employers

## **PMI-RMP Requirements:**

 Experience: A 4-year degree (bachelor's or the global equivalent), with at least 3,000 hours of project RM experience (in the last 5 years)

#### Or

- A secondary diploma (high school or the global equivalent) with at least 4,500 hours of project RM experience.
- Education: 30 hours of training in the domain of risk management (additional 10 hours w/o bachelor's degree or equivalent).

Reference: PMI, "PMI Risk Management Professional (PMI-RMP)" Retrieved from: <u>http://www.pmi.org/en/Certification/PMI-Risk-Management-Professional-PMI-RMP.aspx</u>

## Latest Development

- PMI is published a *new* Global Standard for Risk Management in May 2019.
- The Standard for Risk Management in Portfolios, Programs, and Projects is a significant expansion and deviation from the current Practice Guide for Risk Management.
- The new standard takes a far more comprehensive view of risk across enterprise, portfolio, program, and project management.







# Research – Managing Projects During a Pandemic

# www.pmoadvisory.com/covid19research





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