

Module 1 MGMT 6062

Risk & Opportunity Management: introduction

Risk definition

Risk: definition

- Probability and magnitude of a loss or some other negative outcome from an undesirable event or activity.
 - Not the event itself, but the outcome when the event happens
 - A risk is something we do **NOT** want

Examples

- Undesirable event: employees did not complete their work on time
 - Negative outcomes: the project is delayed, it costs more to recover from delays, and project benefits are lost
- Undesirable event: heavy rain
 - Negative outcome: flooding & erosion
- Undesirable activity: corruption
 - Negative outcomes: The company loses money. People could get hurt. The community loses services.

Opportunity definition

Opportunity: definition

- Probability and magnitude of a **benefit or positive outcome** from a desirable event happening.
- Let's use the term 'opportunity'; **NOT** 'positive risk' or 'impact'
 - PMBOK refers to opportunities as 'positive risks'; **risk is negative**.
 - The term 'Impact' is sometimes used to describe positive outcomes, which can be misleading; impact is also negative.

Examples

- Desirable event: employees complete their work ahead of time
 - Positive outcomes: Project benefits are delivered sooner, and the employees can now work on other important projects
- Desirable event: heavy rain
 - Benefit: agricultural crops are irrigated and will continue to grow
- Desirable activity: ethical behaviour
 - Benefits: The company is trusted to do new projects which make profits and deliver services which the community desires.

Risk Management: what are the implications for Projects?

Project Plan and Goals must be realistic, and deliver desired results

- Scope: risks might prevent Scope from completing, and compromise Quality
- Schedule: risks may impose delays in completing scope items, thus increasing costs.
- Cost: risks may further increase costs of completing existing planned scope.
- Benefits: risks may compromise planned benefits.

Projects must avoid surprises and costly changes

- Risk analysis and response must be part of Project Plans.
- Risk & response status must be included in normal, scheduled project reporting.

Company Interest

- When projects don't deliver according to plans, the company is compromised.

Public and Environmental Interests

- Incompetence, negligence, misconduct, and disregard for the public & environmental interests, must all be avoided

Risk Management 'maturity', from best to worst ...

Best

- Analysis of risk and return, based on evidence & inquiry
 - Evidence of cause & effect
 - Quantitative models, supported by statistical analysis
 - Awareness of errors in quantitative models and simulations
 - Completeness of risk list & 'expert judgement' checked by others

Better than
baseline (OK)

- Some attempt to use quantitative models & verify completeness
 - Some gaps in understanding but experience & insight applied

Baseline
(minimum)

- Management's intuition & competence
 - Experience and insight guide the risk management process

Worse (useless)

- Quantitative and 'scoring' methods used, with misleading results
 - Time & money wasted, but fortunately, expertise is still applied

Worst (worse
than useless)

- Detailed methods, no supporting evidence, results not questioned
 - Methods used with confidence & bad decisions made

Risk Management: biases

Cognitive biases ^[1]

- Misplaced strategic incentives and pressure to deliver results
- ‘Groupthink’ and not seeing the problem
- Desires to avoid ‘negativity’ and to avoid being seen as ‘critical’
- Overconfidence and over-estimating abilities
- Over-reliance on numbers and ranking can hide real problems
 - For example: Events may have a low probability of occurrence, but high negative impact when they do occur

Other biases ^[2]

- Believing that one can predict extreme events
- Studying the past to manage the future: failure of ‘lessons learned’
- Ignoring advice on what not to do
- Assuming that risk can be measured by statistics and numbers
- Failing to realize that ‘mathematically’ and ‘psychologically’ equivalent are DIFFERENT
- Believing that optimizing the business means cutting costs and eliminating redundancies; some costs are essential
- Thinking that uncertain events have known causes

1. Adapted from Hubbard D., *The Failure of Risk Management*, Hoboken, NJ, USA: John Wiley and Sons, 2009

2. Adapted from “The Illusion of control and the challenge of an adaptable Digital Enterprise” J. Cano, ISACA Journal, Volume 3, 2023

Risk Management: critical issues

Accountability

- We do not want to be held accountable for events & outcomes outside our control; nor is it appropriate to make decisions which are not ours to make
- Organizational management changes over time may also affect accountability for actions; there is no clear decision-maker
- Ideally, accountability is shared and controlled by good governance

Understanding

- Risk may be underestimated when level of understanding is low
 - Education, research and critical thinking is essential

Action plans

- Feasibility: consider the extent to which solutions might work as intended, and whether they are effective at reducing risk
- Costs & benefits: consider the accuracy of estimates
- Trade-offs: consider risk acceptance, risk tolerance & resultant limitations on what the business can reasonably do
- Opportunities: consider the different benefits which might be achieved for different levels of cost and resources

Risk & Crisis Management: apply the Risk PM Principle

RISK

Risk by definition is a negative outcome. Risk is not positive.

Continually evaluate exposure to risk, both opportunities and threats, to maximize positive impacts and minimize negative impacts to the project and its outcomes.

- ▶ Individual and overall risks can impact projects.
- ▶ Risks can be positive (opportunities) or negative (threats).
- ▶ Risks are addressed continually throughout the project.
- ▶ An organization's risk attitude, appetite, and threshold influence how risk is addressed.
- ▶ Risk responses should be:
 - Appropriate for the significance of the risk,
 - Cost effective,
 - Realistic within the project context,
 - Agreed to by relevant stakeholders, and
 - Owned by a responsible person.

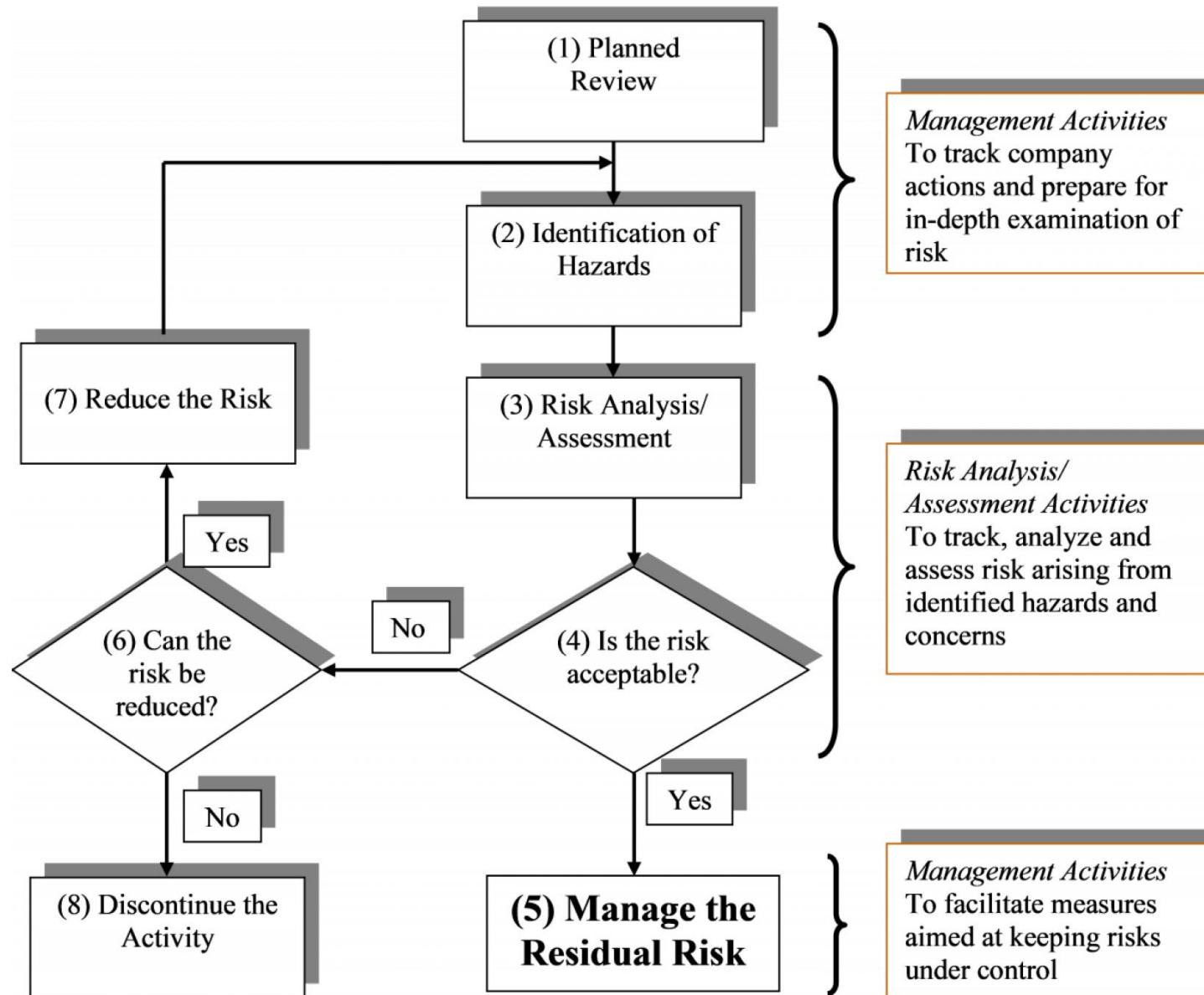
'threshold' = 'tolerance'

Figure 3-11. Optimize Risk Responses

Module 1

Backup Slides

Generic Risk Management Process: Engineers Canada



Engineers Canada: Public Guideline on Risk Management

- “A constant awareness of the risk management process, and some degree of competence in its application, are essential for all engineers.
 - The practice of engineering carries with it an inherent level of risk that engineers must seek to understand and manage.
- Managing the risk ... is arguably the most important step in the process as responsibility has now been taken for assuming the risk & preventing any undesirable incident from occurring ...
 - A key engineering tool employed in this stage is a management system appropriate for the risks being managed.” ^[1]

If responsibility is NOT taken; the risk still exists

Three reasons why this Engineers Canada Guideline is relevant

The Engineers Canada Public Guideline on Risk Management is relevant to Project Management and Project Managers, for at least three reasons:

1. Engineering is a regulated profession because it is in the public interest that practitioners are licensed and competent
 - Project management is not a regulated profession, however, the expectation remains that project managers are competent
2. Project managers must also safeguard life, health, property, economic interests, the public welfare and the environment
 - Risks must be avoided or reduced
3. Projects often include delivery of mechanical, electrical, chemical, biological, structural or environmental elements
 - Such technical & physical elements introduce risk, which must be managed