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University

Introduction

Lecture 1

PMG510

Project Risk Management



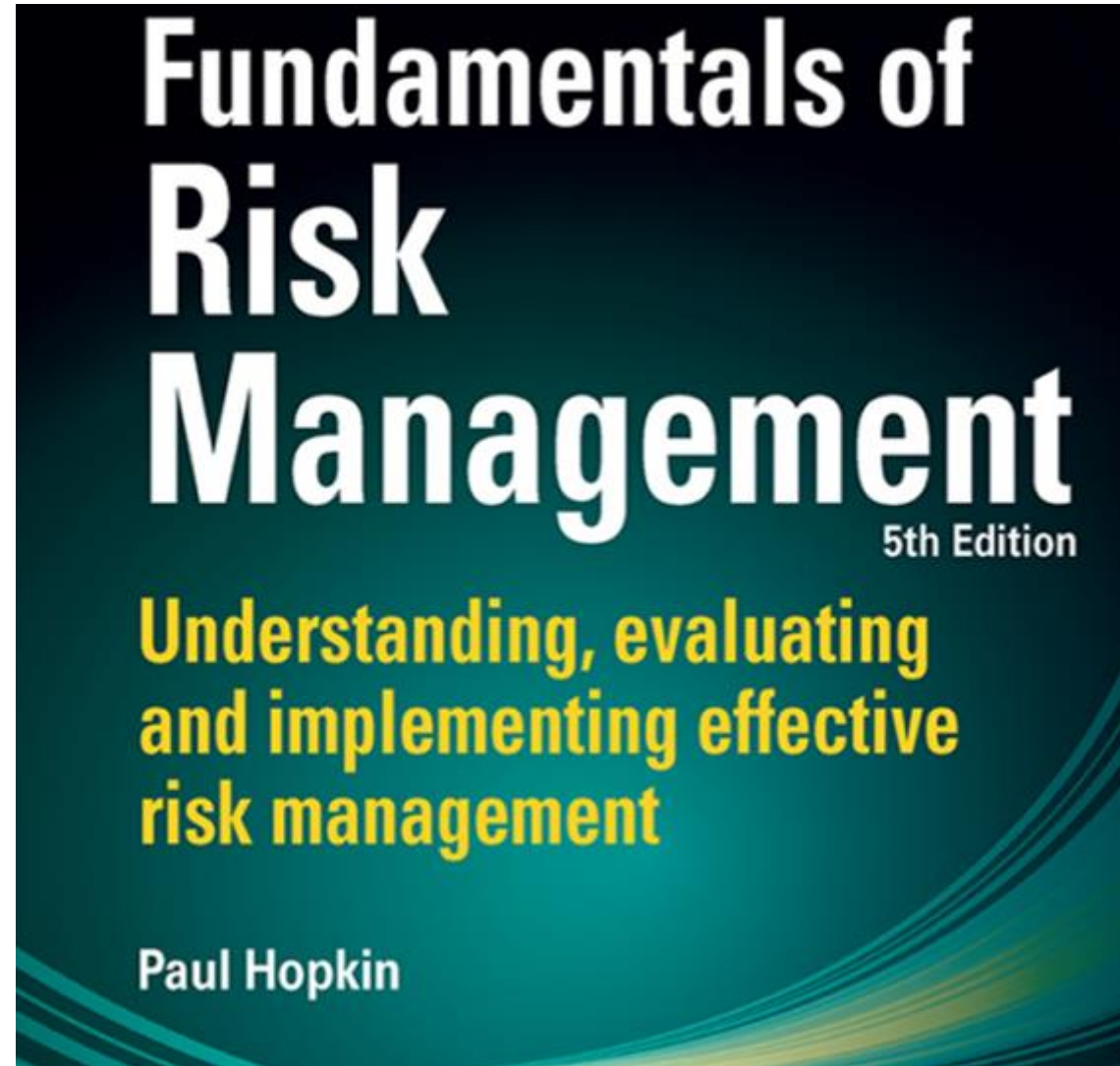
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Introduction to Risk Management

Reference



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Approaches to defining Risk



- The Oxford English Dictionary definition of risk is as follows:

‘a chance or possibility of danger, loss, injury or other adverse consequences’, and the definition of at risk is ‘exposed to danger’.
- In this context, risk is used to signify **negative** consequences. However, taking a risk can also result in a **positive** outcome. A third possibility is that risk is related to **uncertainty** of outcome.

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Approaches to defining Risk



- The Institute of Risk Management (IRM) defines risk as:
“ The combination of the probability of an event and its consequence.”
- Consequences can range from positive to negative.

Approaches to defining Risk



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Organization	Definition of risk
ISO Guide 73	Effect of uncertainty on objectives. Note that an effect may be positive, negative, or a deviation from the expected. Also, risk is often described by an event, a change in circumstances or a consequence.
Institute of Risk Management (IRM)	Risk is the combination of the probability of an event and its consequence. Consequences can range from positive to negative.
Orange Book from HM Treasury	Uncertainty of outcome, within a range of exposure, arising from a combination of the impact and the probability of potential events.
Institute of Internal Auditors	The uncertainty of an event occurring that could have an impact on the achievement of the objectives. Risk is measured in terms of consequences and likelihood.

Types of risks

- Every risk has its own characteristics that require particular management or analysis.
- Risks are divided into four categories:
 - compliance (or mandatory) risks
 - hazard (or pure) risks
 - control (or uncertainty) risks
 - opportunity (or speculative) risks

Types of risks



- In general terms, organizations will seek to **minimize** compliance risks, **mitigate** hazard risks, **manage** control risks and **embrace** opportunity risks.

Types of risks

- **Control risks** are frequently associated with Project Management.
- **Uncertainties** can be associated with the **benefits** that the project produces, as well as uncertainty about the delivery of the project **on time, within budget** and to **specification**. The management of control risks will often be undertaken in order to ensure that the outcome from the business activities falls within the **desired range**. The purpose is to **reduce the variance between anticipated outcomes and actual results**.

Types of risks



- **Opportunity risks:** sometimes, organizations **deliberately** take risks, especially marketplace or commercial risks, **in order to achieve a positive return.**
- The focus of opportunity risks will be towards **investment.**
- Opportunity risks may not be visible or physically apparent, and they are often financial in nature. Although opportunity risks are taken with the intention of obtaining a positive outcome, **this is not guaranteed.**
- Opportunity risks for small businesses include moving a business to a new location, acquiring new property, expanding a business and diversifying into new products

Types of risks



- Hazard risks are the most common risks associated with operational risk management, including occupational health and safety programs.

Risk Description



- In order to fully understand a risk, a detailed description is necessary so that a common understanding of the risk can be identified and ownership/responsibilities may be clearly understood.
- The next example is intended to distinguish between these four types of risk:

Risk Description



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Range of computer risks

In order to understand the distinction between compliance, hazard, control and opportunity risks, the example of the use of computers is helpful. Operating a computer system involves fulfilling certain legal obligations; in particular, data protection requirements and these are the compliance risks. Virus infection is an operational or hazard risk and there will be no benefit to an organization suffering a virus attack on its software programs. When an organization installs or upgrades a software package, control risks will be associated with the upgrade project.

The selection of new software is also an opportunity risk, where the intention is to achieve better results by installing the new software, but it is possible that the new software will fail to deliver all of the functionality that was intended and the opportunity benefits will not be delivered. In fact, the failure of the functionality of the new software system may substantially undermine the operations of the organization.

Inherent level of risk



- It is important to understand the uncontrolled level of all risks that have been identified. This is the level of the risk **before** any actions have been taken to change the likelihood or magnitude of the risk.
- Identifying the inherent level of the risk makes it possible to identify the importance of the **control measures in place**.

Inherent level of risk

- There is considerable debate about whether to undertake risk assessment at **inherent** or **current level**, the purpose of any risk assessment remains the same. It is to identify what is believed to be the current level of the risk and identify the key controls that are in place to ensure that the current level is actually achieved.

Inherent level of risk



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Crossing the road

Crossing a busy road would be inherently dangerous if there were no controls in place and many more accidents would occur. When a risk is inherently dangerous, greater attention is paid to the control measures in place, because the perception of risk is much higher. Pedestrians do not cross the road without looking and drivers are always aware that pedestrians may step into the road. Often, other traffic calming control measures are necessary to reduce the speed of the motorists or increase the risk awareness of both motorists and pedestrians.

Risk classification System



- Risks can be classified according to the nature of the attributes of the risk, such as timescale for impact, and the nature of the impact and/or likely magnitude of the risk. They can also be classified according to the timescale of impact after the event occurs. The source of the risk can also be used as the basis of classification. In this case, a risk may be classified according to its origin, such as fire, fraudulent, etc.

Risk classification System



- A further way of classifying risks is to consider the nature of the impact. Some risks can cause detriment to the finances of the organization, whereas others will have an impact on the activities or the infrastructure. Further, risks may have an impact on the reputation of the organization, or on its status and the way it is perceived in the marketplace.

Risk classification System



- An important consideration for organizations when deciding their risk classification system is to determine whether the risks will be classified according to the source of the risk, the component impacted or of the consequences of the risk materializing.
- It is likely that each risk will need to be classified in several ways in order to clearly understand its potential impact.

Risk likelihood and magnitude

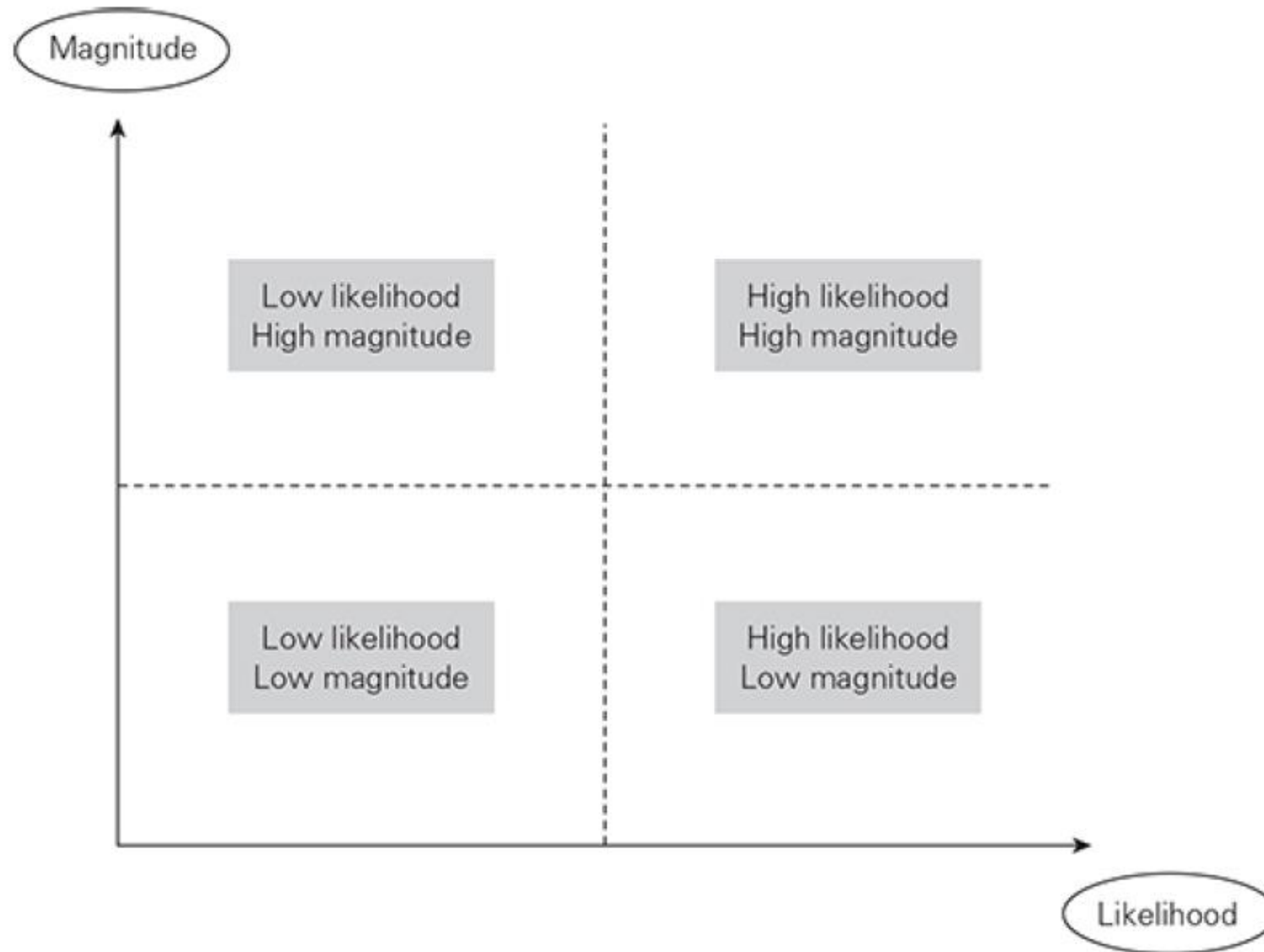


- Risk likelihood and magnitude are best demonstrated using a **risk matrix**.

Risk likelihood and magnitude



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Risk likelihood and magnitude



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- However, the more important consideration for risk managers is not the magnitude of the event, but the impact of the event and the consequences that follow.
- Because the impact (and the associated consequences) of an event is usually more important than its magnitude (or severity), every risk matrix used in the remainder of this course will plot impact against likelihood, rather than magnitude against likelihood.

Risk likelihood and magnitude



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- As risks move towards the top right-hand corner of the risk matrix, they become more likely and have a greater impact. Therefore, the risk becomes more important and immediate and **effective** risk control measures need to be in place.