

PMG510

Project Risk Management

Prepared by Dr. Salahaldin
Abuabdou

جامعة الجميع الذكية

تسعى لتكون الكيان الأول الذي يتبنى مبدأ المجتمع التعليمي
التعاوني ويقدم العلم مقابل العمل لتنمية وبناء المجتمعات.

Approaches to defining risk
Lecture 1



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Reference

Fundamentals of Risk Management

4th Edition

Understanding, evaluating
and implementing effective
risk management

Paul Hopkin



جامعة زايد
EVERYONE'S SMART UNIVERSITY

Course Outlines

- ☐ Approaches to defining risk
- ☐ Impact of risk on organizations
- ☐ Types of risks
- ☐ Scope of risk management
- ☐ Principles and aims of risk management
- ☐ Risk management standards
- ☐ establishing the context
- ☐ enterprise risk management
- ☐ Alternative approaches
- ☐ Risk assessment considerations

Lecture Outlines

- *Risk management in context*
- *Nature of risk*
- *Risk management terminology*
- *Benefits of risk management*
- *Features of risk management*
- *Definitions of risk*
- *Types of risks*
- *Risk description*
- *Inherent level of risk*
- *Risk classification systems*
- *Risk likelihood and magnitude*



Risk Management Introduction

Risk management in context:

- We all face risks in our everyday lives. Risks arise from personal activities and range from those associated with travel through to the ones associated with personal financial decisions.
- There are considerable **risks present in the domestic component of our lives**, and these include fire risks in our homes and financial risks associated with home ownership.
- Indeed, there are also a whole range of risks associated with domestic and relationship issues, but these are outside the scope of this course.
- This course is primarily concerned with **business and commercial risks and the roles that we fulfil in our job or occupation**.
- However, the task of **evaluating risks and deciding how to respond to them is a daily activity**, not only at work but also at home and during leisure activities.

Risk Management Introduction

Nature of risk:

- Recent events in the world have brought risk into **higher profile**. Terrorism, extreme weather events and the global financial crisis represent the extreme risks that are facing society and commerce, and finally covid19.
- Evaluating **the range of risk responses** available and deciding **the most appropriate** one in each case is at the heart of risk management.
- **Responding to risks should produce benefits** for us as **individuals**, as well as for the **organizations** where we work and/or are employed.
- Fire and accident are the types of risks that can only **have negative outcomes**, and they are often referred to as **hazard risks**.
- **Compliance requirements** are viewed by many organizations as hazard risks, whereby **failure to comply** can only be **negative**

Risk Management Introduction

Nature of risk:

- However, other organizations have the view that achieving compliance **can bring additional benefits or deliver the ‘upside of risk’**.
- Some other risks have established or required responses that are imposed on us as individuals and/or on organizations as **mandatory requirements**
- **Examples,**
 - In our personal lives, buying insurance for a car is usually a legal requirement, whereas buying insurance for a house is often not, but is good risk management and very sensible.
 - Keeping your car in good mechanical order will reduce the chances of a breakdown. However, even vehicles that are fully serviced and maintained do occasionally break down. Maintaining your car in good mechanical order will reduce the chances of breakdown, but will not eliminate them completely.

Risk Management Introduction

Nature of risk:

- These types of risks that have a **large degree of uncertainty** associated with them are often referred to as **control risks**.
- As well as **hazard and control risks**, there are risks that we take because we desire (and probably expect) a **positive return**.
- **Example**, you will invest money in anticipation that you will make a profit from the investment. Likewise, placing a bet or gambling on the outcome of a sporting event is undertaken in anticipation of receiving positive payback.
- People participate out of choice in motor sports and other potentially dangerous leisure activities.
- In these circumstances, the return may not be financial, but can be measured in terms of pride, self-esteem or peer group respect. Undertaking activities involving risks of this type, where a positive return is expected, can be referred to as taking opportunity risks.

Risk Management Introduction

Risk management:

- Organizations face a very wide range of risks that can impact the outcome of their operations
- The events that can impact an organization may **inhibit what it is seeking to achieve** (hazard risks), **enhance that aim (opportunity risks)**, or **create uncertainty** about the outcomes (**control risks**).
- Risk management needs to offer an **integrated approach** to the evaluation, control and monitoring of these three types of risk.
- Risk management also has an important part to **play in the success of not-for-profit organizations such as charities** and (for example) clubs and other membership bodies.
- the risk management framework is presented and described in different ways in the range of standards, guides and other publications that are available.
- The key components of a **successful** risk management framework are the **communications** and **reporting structure** (architecture), the overall risk **management strategy** that is set by the organization (**strategy**) and the set of guidelines and procedures (**protocols**) that have been established.



Risk Management Introduction

Risk management terminology:

- Most risk management publications refer to the benefits of having a **common language of risk within the organization.**
- Many organizations manage to achieve this common language and common understanding of risk **management processes and protocols at least internally.**
- However, it is usually the case that within a business sector, and sometimes even within individual organizations, the development of a **common language of risk can be very challenging.**
- Reference and supporting materials use a great range of terminologies.
- The different approaches to risk management, the different risk management standards that exist and the wide range of guidance material that is available often use different terms for the same feature or concept. This is regrettable and can be very confusing, but it is inescapable.

Risk Management Introduction

Risk management terminology:

- Attempts are being made to **develop a standardized language of risk**, and ISO Guide 73 has been developed as the common terminology that should be used in all ISO standards.
- The terminology set out in ISO Guide 73 is used throughout this course as the default set of definitions wherever possible.
- However, the use of a standard terminology is not always possible and alternative definitions may be required.
- Indeed, ISO itself also publish a terminology guide, ISO/IEC Guide 51:1999, entitled ‘Safety Aspects: – Guidelines for Their Inclusion in Standards’, and the definitions in Guide 51 are not fully aligned with those in Guide 73.

Risk Management Introduction

Benefits of risk management:

- There are a range of reasons why organizations undertake risk management activities
- These reasons are summarized in this course as **mandatory, assurance, decision making and effective and efficient core processes (MADE2)**
- Mandatory refers to risk management activities designed to ensure that an organization **complies with legal and regulatory obligations**, as well as customer or client requirements.
- The board of an organization **will require assurance that significant risks have been identified** and appropriate controls put in place
- In order to ensure that **correct business decisions are taken**, the organization should undertake risk management **activities that provide** additional structured information to assist with business decision making.
- Finally, a key benefit from risk management **is to enhance the effectiveness and efficiency of operations within the organization.**

Risk Management Introduction

Benefits of risk management:

- It should help **ensure that business processes** (including process enhancements by way of tactics, projects and other change initiatives) **are also effective and efficient**
- Risk management inputs are required in relation to **strategic decision making**, but also in relation to **the effective delivery of projects** and programmes of work, as well as in relation to **the routine operations** of the organization.
- **Strategy, tactics and operations** are underpinned by the need to **achieve compliance**.
- **Strategic, tactical, operational and compliance (STOC)** core processes and activities encompass the whole range of processes of an organization

Risk Management Introduction

Features of risk management:

- Failure to adequately manage the risks faced by an organization can be caused by **inadequate risk recognition, insufficient analysis of significant risks and failure to identify suitable risk response activities**.
- Also, failure to set a risk management **strategy** and to **communicate** that strategy and the associated responsibilities may result in **inadequate management of risks**.
- It is also possible that the risk management procedures or protocols may be flawed, such that these protocols may actually be incapable of delivering the required outcomes.
- The consequences of failure to adequately manage risk **can be disastrous** and may result in **ineffective and/or inefficient operations**, projects that are not completed on time and strategies that are not delivered, or were incorrect in the first place.
- In order to be **successful, the risk management initiative** should be **proportionate, aligned, comprehensive, embedded and dynamic (PACED)**.

Risk Management Introduction

Features of risk management:

- **Proportionate** means that the effort put into risk management should be **appropriate to the level of risk that the organization faces**.
- Risk management activities should be **aligned with other activities** within the organization.
- Activities will also need to **be comprehensive**, so that any risk management initiative covers all the aspects of the organization and all the risks that it faces.
- As with all management activities and processes in an organization, risk management needs to **be adapted and modified to align with the core processes**, and organizational **culture**.
- In relation to risk management, an organization will first need to specifically respond to **statutory obligations** and the requirements of regulators.
- Once they have been satisfied, most organizations can work on the basis that whatever works within the organization and delivers the required benefits, outputs and outcomes is the correct and appropriate approach to (Enterprise Risk Management) **ERM** for that organization

Definitions of risk :

- The definition of at risk is ‘**exposed to danger**’.
- 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**.
- Ex. Take the example of owning a **motor car**. For most people, owning a car is an opportunity to become more mobile and gain the related benefits. However, there are **uncertainties** in owning a car that are related to **maintenance and repair costs**. Finally, motor cars can be involved in accidents, so there are obvious **negative outcomes** that can occur. It is also important to remember **the legal obligations associated** with car ownership and the rules that must be **obeyed** when the car is being driven on a road.

Definitions of risk :

- Definitions of risk can be found from **many sources**, and some key definitions are set out in the following table (**Definitions of risk**):

Organization	Definition of risk
ISO Guide 73 ISO 31000	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.

Definitions of risk :

- It is generally accepted that risk is best defined by concentrating on **risks as events**, as in the definition of risk provided in ISO 31000 and the definition provided by the Institute of Internal Auditors
- perhaps a risk can simply be considered to be '**an unplanned event with unexpected consequences**'. Greater clarity is likely to be brought to the risk management process if the focus is on events.
- **Ex.** What could disrupt a theatre performance *“The events that could cause disruption include a power cut, the absence of a key actor, or a substantial transport failure or road closures that delay the arrival of the audience, as well as the illness of a significant number of staff. Having identified the events that could disrupt the performance, the management of the theatre needs to decide what to do to reduce the chances of one of these events causing the cancellation of a performance.”*



Types of risks:

- **Risk** may have positive or negative outcomes or may simply result in uncertainty. Therefore, risks may be considered to be related to an opportunity or a loss or the presence of uncertainty for an organization.
- **Risks are divided into four categories:**
 1. Compliance (or mandatory) risks;
 2. Hazard (or pure) risks;
 3. Control (or uncertainty) risks;
 4. Opportunity (or speculative) risks

Types of risks:

- In general, organizations will seek to minimize compliance risks, mitigate hazard risks, manage control risks and embrace opportunity risks.
- It is important to note that there is **no ‘right’ or ‘wrong’** subdivision of risks. Whatever the theoretical discussions, the most important issue is that an organization adopts the risk classification system that is most suitable for its own circumstances
- There are certain risk events that can only result in **negative outcomes**. These risks are **hazard risks or pure risks**, and these may be thought of as **operational or insurable risks**.
- In general, organizations will have a **tolerance of hazard risks**, and these need to be managed within **the levels that the organization can tolerate**. A good example of a hazard risk faced by many organizations is that **of theft**.

Types of risks:

- There are other risks that give rise to **uncertainty about the outcome of a situation**. These can be described as **control risks** and are frequently associated with **project management**.
- In general, organizations will have an aversion to control risks. **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.
- organizations **deliberately** take risks, especially **marketplace or commercial risks**, in order to achieve **a positive return**. These can be considered as opportunity or speculative risks, and an organization will have **a specific appetite** for investment in such risks.
- Opportunity risks relate to the relationship between **risk and return**. The purpose is to take action that involves risk to achieve positive gains. The focus of opportunity risks will be towards **investment**.



Types of risks:

- Hazard risks are the most common risks associated with **operational risk management**, including **occupational health and safety programmes**.
- Control risks are associated with **unknown and unexpected events**. They are sometimes referred to as uncertainty risks and they can be **extremely difficult to quantify**.
- There are two main aspects associated with opportunity risks. There are **risks/ dangers** associated with taking an opportunity, but there are also risks associated with **not taking the opportunity**. 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**.

Risk description:

- The following items list the range of information that must be recorded to fully understand a risk.
- ✓ **Name or title of risk**
- ✓ **Statement of risk**, including scope of risk and details of possible events and dependencies
- ✓ **Nature of risk**, including details of the risk classification and timescale of potential impact
- ✓ **Stakeholders in the risk**, both internal and external
- ✓ **Risk attitude**, appetite, tolerance, limits for the risk and/or risk criteria
- ✓ **Likelihood** and magnitude of event and consequences should the risk materialize at current /residual level
- ✓ **Control standard required**, target level of risk or risk criteria
- ✓ **Incident and loss experience**

Risk description:

- The following items list the range of information that must be recorded to fully understand a risk. (cont.)
 - ✓ **Existing control** mechanisms and activities
 - ✓ **Responsibility** for developing risk strategy and policy
 - ✓ **Potential for risk improvement** and level of confidence in existing controls
 - ✓ **Risk improvement** recommendations and deadlines for implementation
 - ✓ **Responsibility for implementing** improvements
 - ✓ **Responsibility for auditing** risk compliance

Risk description:

- The example below is intended to distinguish between these four types of risk.

Example: 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**.
- Although there are advantages in identifying the inherent level of risk, there **are practical difficulties** in identifying this with some types of risks
- Identifying the inherent level of the risk makes it possible to identify the importance of the **control measures in place**.
- The IIA has previously held the view that the assessment of all risks should commence with the identification of the inherent level of the risk.
- The guidance from the IIA has previously stated that: **‘in the risk assessment, we look at the inherent risks before considering any controls.’**

Inherent level of risk:

- Often, a **risk matrix** is used to show the inherent level of the risk in terms of **likelihood and magnitude**.
- **The residual or current level of** the risk can then be identified, after the control or controls have been put in place.
- The effort that is required to reduce the risk from its inherent level to its current level can be clearly indicated on the risk matrix.
- The **inherent level** of risk is sometimes referred to as **the absolute risk or gross risk**.
- **The current level** of risk is often referred to as the **residual level, net level** or the managed level of risk.

Inherent level of risk:

- The following example provides an example of how inherently high-risk activities are reduced to a lower level of risk by the application of **sensible and practical risk response options**.

Ex. Crossing 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 systems:

- 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 counterparty or credit risk.**
- 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 systems:

- Risks may also be classified according to the **component or feature** of the organization that will be impacted
- Ex, Risks can be classified according to whether they will impact **people, premises, processes or products**.
- 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.
- Individual organizations will decide on the risk classification system that suits them best, depending on the nature of the organization and its activities.

Risk classification systems:

- Also, many risk management standards and frameworks suggest a specific risk classification system. If the organization adopts one of these standards, then it will tend to follow the classification system recommended.
- The risk classification system that is selected should be fully relevant to the organization concerned.
- There is **no universal classification system** that fulfils the requirements of all organizations.

Risk likelihood and magnitude:

- Risk likelihood and magnitude are best **demonstrated using a risk matrix.**
- Risk matrices can be produced in **many** formats. Whatever format is used for a risk matrix, it is a very valuable **tool for the risk management practitioner.**
- The basic style of risk matrix plots the **likelihood of an event against the magnitude** or impact should the event **materialize.**
- The following figure is an illustration of a simple risk matrix, also referred to **as a risk map or heat map.**
- This is a commonly used method of illustrating risk likelihood and the magnitude (or severity) of the event should the risk materialize.
- The use of the risk matrix to illustrate risk likelihood and magnitude is a fundamentally important risk management tool

Risk likelihood and magnitude:

- The use of the risk matrix to illustrate risk likelihood and magnitude is a fundamentally important risk management tool.
- The risk matrix can be used to plot the nature of individual risks, so that the organization can decide whether the risk is acceptable and within the risk appetite and/or risk capacity of the organization.

FIGURE 1.1 Risk likelihood and magnitude



Risk likelihood and magnitude:

- **The term likelihood is used rather than frequency**, because the word frequency implies **that events will definitely occur** and the risk matrix is registering how often these events take place.
- Likelihood is a **broader** word that includes frequency, but also refers to the chances of an unlikely event happening. However, in risk management literature, the word ‘probability’ will often be used to describe the likelihood of a risk materializing
- The word **magnitude** is used rather than **severity**, so that the same style of risk matrix can be used to illustrate **compliance, hazard, control and opportunity risks**.
- **Severity** implies that the event is **undesirable** and is, therefore, related to **compliance** and **hazard** risks.
- The **magnitude** of the risk may be considered to be its **gross** or **inherent level** before controls are applied.

Risk likelihood and magnitude:

- Figure 1.1 plots likelihood against the magnitude of an event. 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**.
- ***Example**, a large fire could occur that completely destroys a warehouse of a distribution and logistics company. Although the magnitude of the event may be large, if sufficient insurance is in place, the impact in terms of financial costs for the company could be minimal, and if the company has produced plans to cope with such an event, the consequences for the overall business may be much less than would otherwise be anticipated.*

Risk likelihood and magnitude:

- **The magnitude** of an event may be considered to be **the inherent level** of the event and the **impact** can be considered to be **the risk-managed level**.
- 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**.

Thanks



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