Risk Management

Summer Semester 2023/2024

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CHAPTER ONE: Introduction To Risk Management

Textbooks:

- ***Introduction to Risk Management and Insurance, by M. Dorfman and D. Cather, 10th edition, Prentice Hall.***
- ***Lecturer Handouts, Book Chapters***

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Learning Outcomes

- Produce a range of definitions for risk and risk management
- Identify the features of the four types of risk
- List the characteristics of risk that need to be identified
- Summarize the options for the attachment of risks
- Explore the origins and growth of the discipline of risk management
- Introduce ERM, PACED and MADE2

What is risk and why is it important?

Definitions of risk

- **Oxford English Dictionary:**
  - ✓ *' A chance or possibility of danger, loss, injury or other adverse consequences'* - **Negative consequences**
- **12th-Century Europe:**
  - ✓ A game of chance (throw of a dice)
  - ✓ Meaning "opportunity for gain as well as a threat".
  - ✓ The positive outcomes of taking a risk.
- **Perry and Hayes (1985) differentiated:**
- **Risk & Uncertainty**
  - ✓ **Risk** is measurable uncertainty
  - ✓ **Uncertainty** is an un-measurable risk
- **Flanagan and Norman (1993) Stated:**
  - ✓ uncertainty is unmeasurable and has no previous data
- We now live in a 'data-rich' environment – ***how has risk changed***?

Organization	Definition
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	Risk is the **combination of the probability of an event and its consequence**. Consequences can range from positive to negative.
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**.
HM Government: The Orange Book (2020)	The effect of uncertainty on objectives. Risk is usually expressed in terms of **causes, potential events, and their consequences.**

Types of Risk Action

Compliance	• mandatory risks	minimize
Hazard	• pure risks	mitigate
Control	• uncertainty risks	manage
Opportunity	• speculative risks	embrace

Risk Type	التقيد **Features**
Compliance Risk	They are associated with adherence to **the law and the regulations**. If failing to act or acting inappropriately, the company will suffer from legal and financial penalties. The mandatory requirement represents "**License to operate**".
Hazard Risk	They are associated with **a source of potential harm**. Hazard risks are the most common risks associated with **operational risk** management, including occupational health and safety programs,
Control Risk	Associated with **unknown & unexpected events**. Sometimes referred to as **uncertainty risks** & can be extremely difficult to quantify. Frequently associated with **new projects**.
Opportunity Risk	Risks associated with **taking opportunity & risks of NOT acting**. This type of risk is taken with the **intention of obtaining a positive outcome, but NO guaranteed**.

Identifying risk and levels of risk

- **Characteristics :**
  - In order to fully appreciate 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
- **Levels of risk:**
  - **Inherent risk**:
    - ✓ before any actions have been taken to change the likelihood or magnitude of the risk
  - **Current or residual risk**:
    - ✓ following the application of control measures
  - **Target risk**:
    - ✓ desired level of risk or the level that will be obtained with the application of further measures

- **Example of a "Start-up" business in the financial sector:**
- **Compliance risk :**
  - The co needs to be authorized by the relevant authorities, e.g., Company Registry in Jordan
  - Need to nominate senior managers to be responsible for filling tax returns/annual return
- **Hazard risk:**
  - Theft or fraud caused by employee
- **Control risk:**
  - If the co-designed a new software package, control risk will be associated with this new project
- **Opportunity risk:**
  - Software might be used by clients in the sector they have not specifically targeted >>> created an opportunity >>>> but might not work out at the end.

Type of Risk Example: risks associated with owning a car

Risk	Events
Compliance requirements Of owning a car	**That could result in regulatory enforcement** 1. Insufficient &/or inadequate 3rd party car insurance 2. Inattentive/aggressive driving results in traffic offence(s) 3. Tires in poor condition and other maintenance obligations
Hazards of owning a car	**That you do not want to happen and that can only be negative** 1. You pay too much for the car or it is in poor condition 2. You are involved in a collision or road accident 3. The car gets stolen or vindictively damaged
Uncertainties of owning a car (Control Risks)	**That you know will happen, but the impacts are variable** 1. The cost of borrowing money to buy the car could change 2. Price of fuel (gas) could go up or down 3. Maintenance, breakdown and repair costs will vary
Opportunities of owning a car	**You hope will happen, but would fail to occur** 1. You can travel more easily than depending on others or using public transportation 2. Enhanced job opportunities because you will be more mobile 3. Save money on other forms of public transport

How to handle risks:

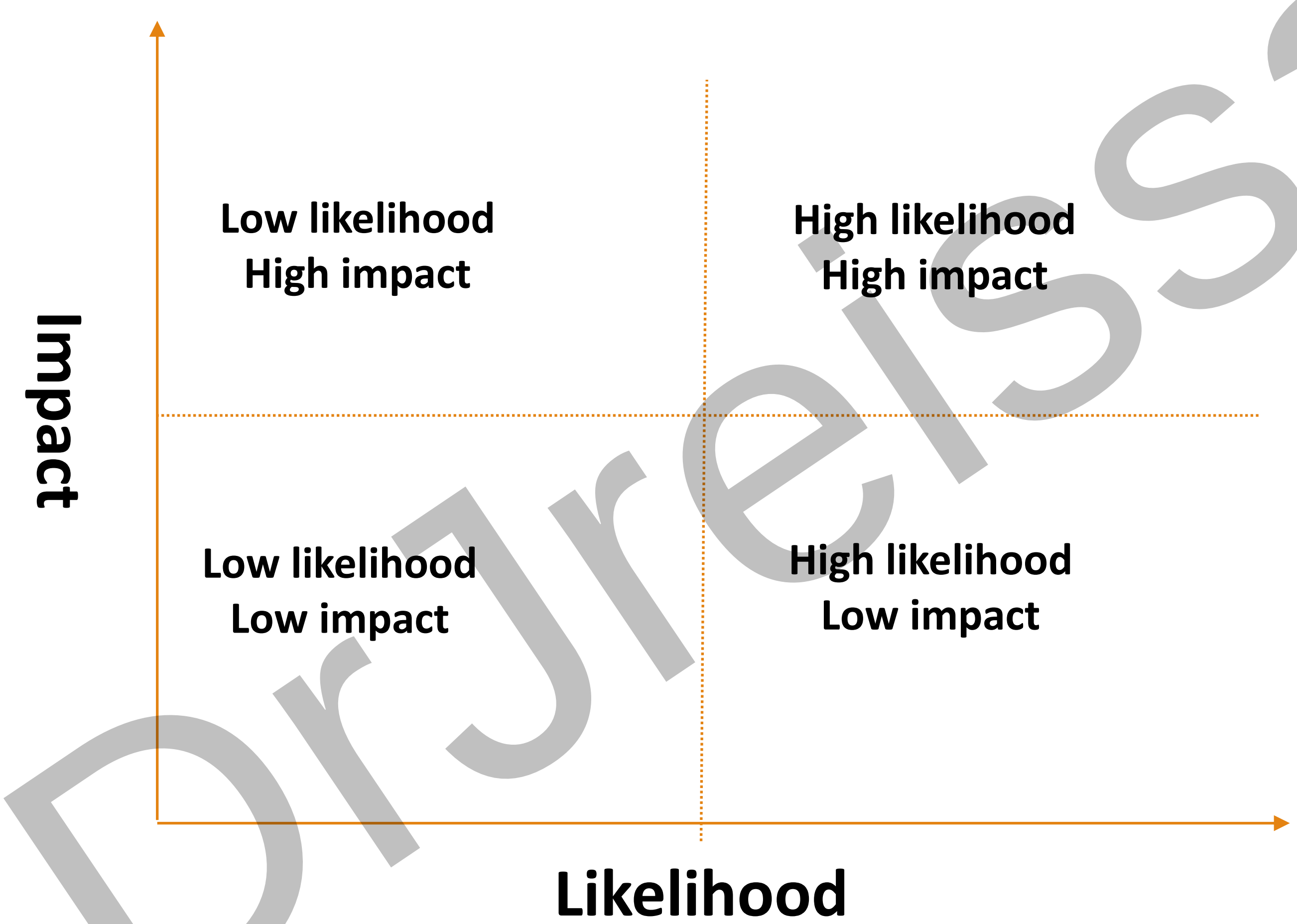
- ***Minimize*** Compliance risks
  - Dedicated teams of specialist risk professional will be employed (esp. health & safety; money laundering; security arrangement)
- ***Mitigate*** Hazard risks (e.g. safety risk)
  - Min safety risks to the lowest level that is cost effective and in compliance with the law (e.g. insurance policy)
- ***Managing*** Control risks
  - Set up contingency fund - allowing unexpected
  - Include contingent time into the project schedule
- ***Embrace*** Opportunity risks
  - Decide whether company has an appetite for seizing the opportunity
  - Seeks to max the benefits of taking entrepreneurial risks

Levels of Risk

- It is important to understand the level of risk if no controls are in place.
- Levels of risk:
  - Inherent risk (sometimes refers to "gross" / absolute risk):
    - Before any actions have been taken to change the likelihood or magnitude of the risk
  - Current or residual risk (refers to "net" / managed level of risk):
    - After application of control measures have been put in place
  - Target risk:
    - Desired level of risk or the level that will be obtained with application of further measures

Risk mapping
heat mapping

A Risk Matrix



- Have advantages in ID the inherent level of risk, however sometime it is not easy to do so.
  - e.g., Knowing when will accidents occur in a busy traffic road
- However ID the inherent and current level of the risk possible to find the control measures in place
  - e.g., controls include pedestrian crossings, traffic calming measures and speed cameras or signals to reduce the speed of vehicles.
- Risks can be classified as:
  - Timescale - both at impact (long-, medium-, & short-term) and after the event;
  - Source of risk, e.g., counterparty/credit risk;
  - Nature of the impact likely magnitude of the risk
  - Component that will be impacted (e.g., people, premises, process, or products)

Timescale of risk impact

- Long-term risk
  - Impact up to 5 years
  - Relate to strategic decision
  - e.g. launch a new product □ choose a computer system
- Medium-term risk
  - Impact some time after the even occurs
  - Associated with projects or program of work □ project to implement the new software
- Short-term risk
  - Impact immediately
  - Associated with immediate consequence as soon as the event has occurred □ Accidents at work, fire and theft of the computer system/softwares

Example on different type of risk

An organization will install a new software in anticipation of gaining efficiency & greater functionality

1. Decision to install new software & the choice of the software □ impact of opportunity risk
2. Installation of the software is a project □ impact of control risk
3. After the new software is installed □ impact of hazard risks (virus infection/increase its exposure to ransomware)
4. If breach the privacy rule □ impact of compliance risk

Benefits of risk management: STOC

- Following the Covid-19 pandemic, many organizations took a greater interest and a proactive approach to risk and risk management 4 areas of improvements

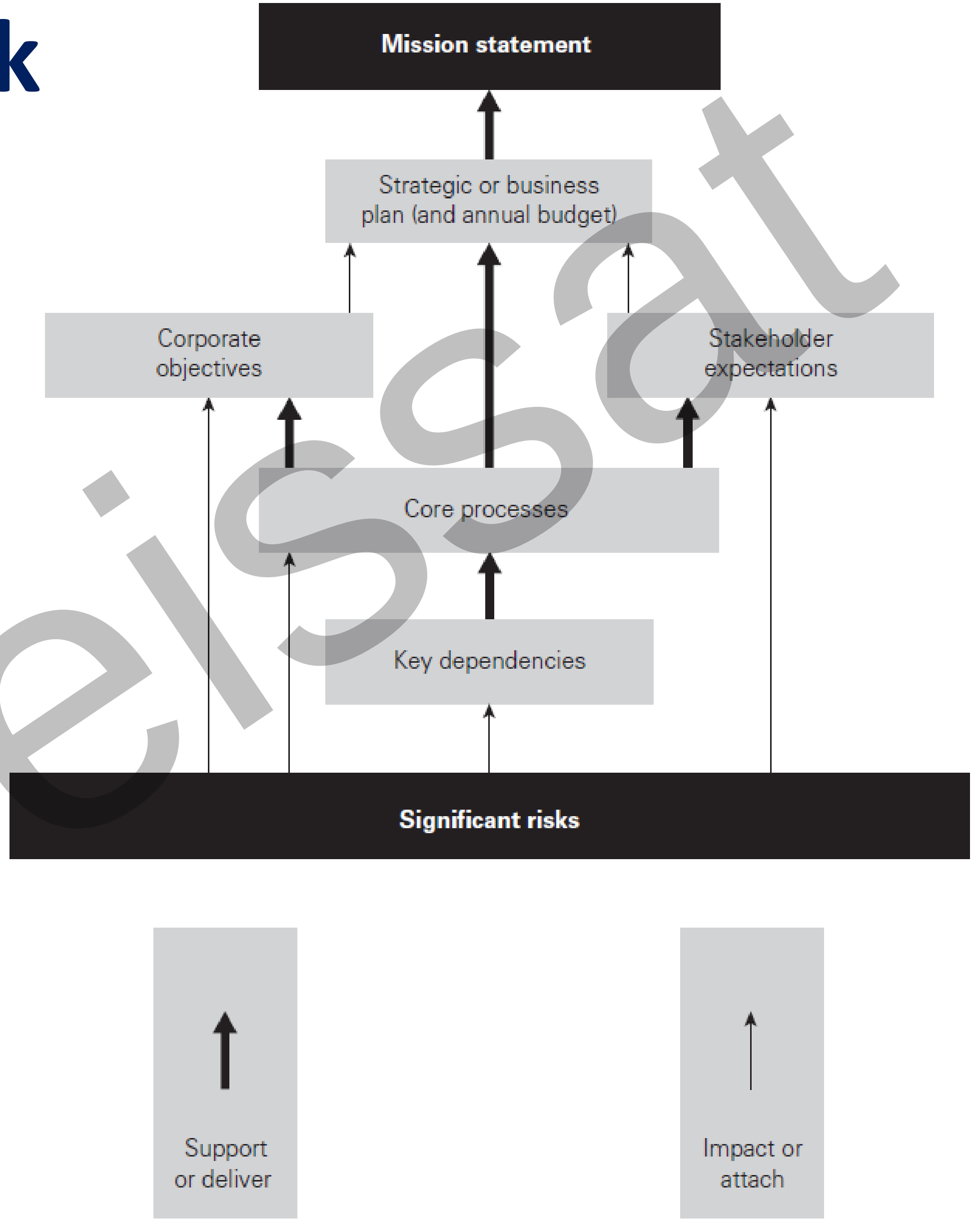
1. **S**trategy: Because the risks associated with different strategic options will be fully analyzed; better strategic decisions will be reached
2. **T**actics: Because consideration will have been given to selection of the tactics and the associated risks involved, available alternatives can be evaluated
3. **O**perations: Because events that can cause disruption will be identified in advance and actions taken to reduce their likelihood of occurring, the damage caused by these events will be limited and the costs contained
4. **C**ompliance: That will be enhanced because the risks associated with failure to achieve compliance with statutory and customer obligations will be addressed.

Attachments of Risk

- Risk and corporate objectives

- Risks are capable of impacting the key dependencies that deliver the core processes of an organization

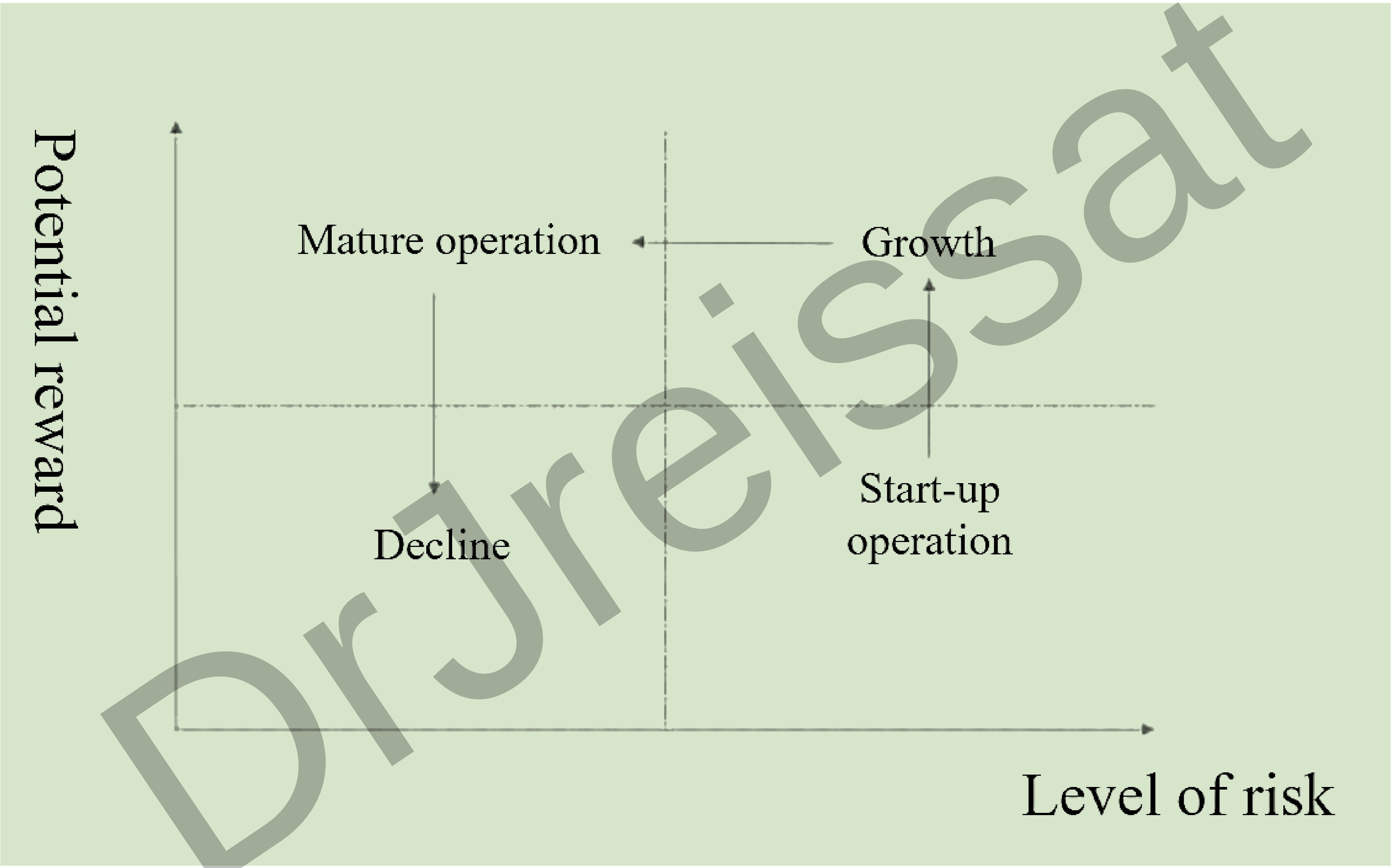
- Risk and reward



- Risk and corporate objectives/shareholder expectations
  - Most standard definitions refer to risks as being attached to corporate objectives
  - Corp obj./Shareholder exp. help define the core processes of organization
- Risks are capable of impacting the key dependencies that deliver the core processes of an organization
  - e.g. retail co didn't develop online platform were unable to effectively maintain business operations under the Covid-19

- Risk and reward
  - Hazard risk - reward will be fewer disruptive events in the future
  - Project risk - reward will be the project is more likely to be delivered on time, within budget and to specifications/quality.
  - Opportunity risk - reward in a higher rate of successful new products launches or lower level of loss for all new activities/products
- Profit /Enhanced level of service is the reward for taking risk.

Risk and Reward



Risk Management

- ✓ Origins and early developments in insurance. Risk finance drove the development

- ✓ Specialist areas (project, energy, financial, IT, clinical)

- ✓ Uniting into a single function and lessening link with insurance

Table 3.1 Definitions of risk management

Organization	Definition
ISO Guide 73	Co-ordinated activities to direct and control an organization with regard to risk.
Institute of Risk Management	Process which aims to help organizations understand, evaluate and take action on all their risks with a view to increasing the probability of success and reducing the likelihood of failure.
HM Treasury	The co-ordinated activities designed and operated to manage risk and exercise internal control within an organization
London School of Economics	Selection of those risks a business should take and those that should be avoided or mitigated, followed by action to avoid or reduce risk.

Risk Management

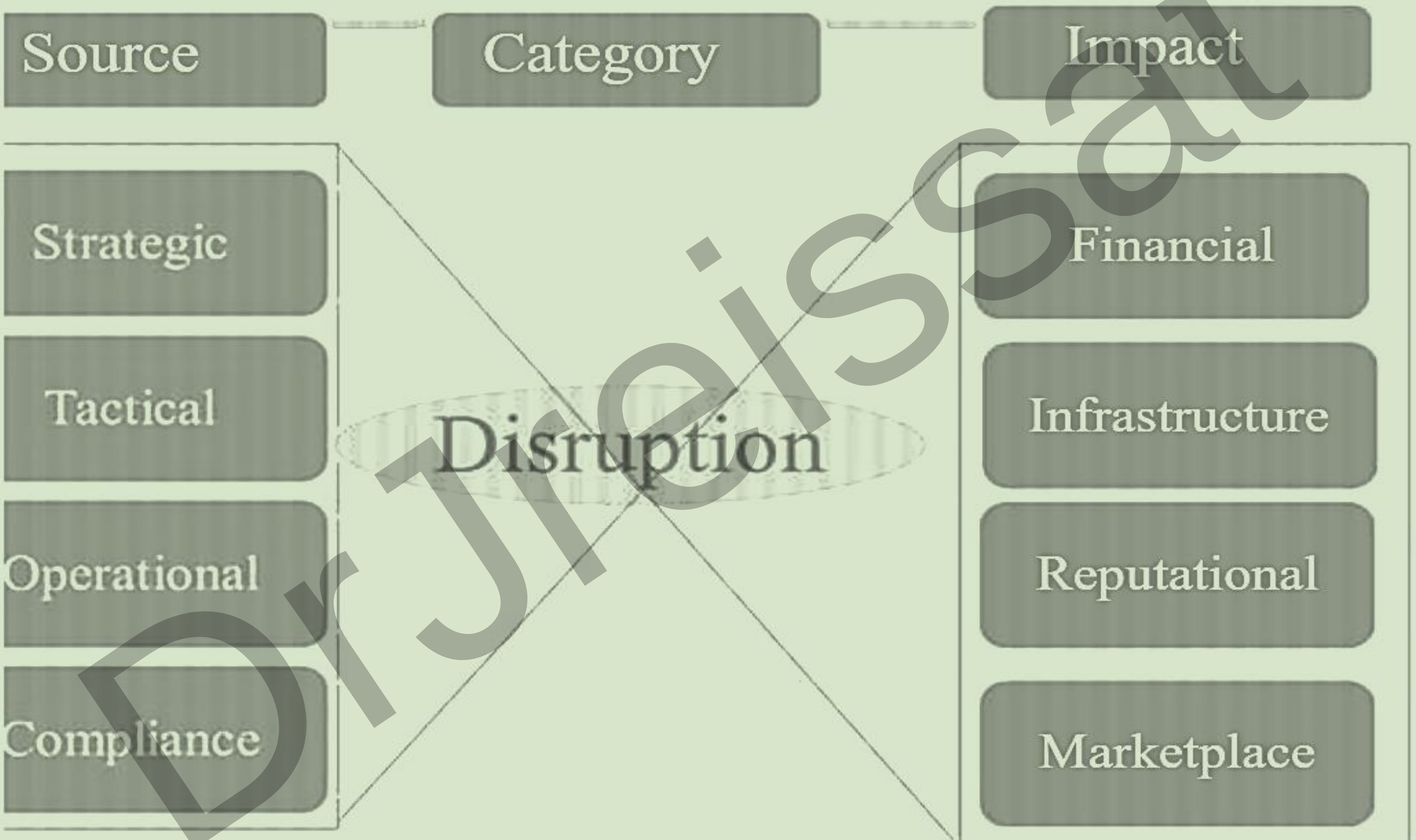
- Some organizations may be risk averse, while others are risk aggressive

Risk Averse Organization:
An organization that prioritizes minimizing risks and maintaining stability, often avoiding uncertainty and focusing on consistent, predictable outcomes.

Risk Aggressive Organization:
An organization that embraces significant risks in pursuit of high rewards, prioritizing rapid growth and innovation over stability.

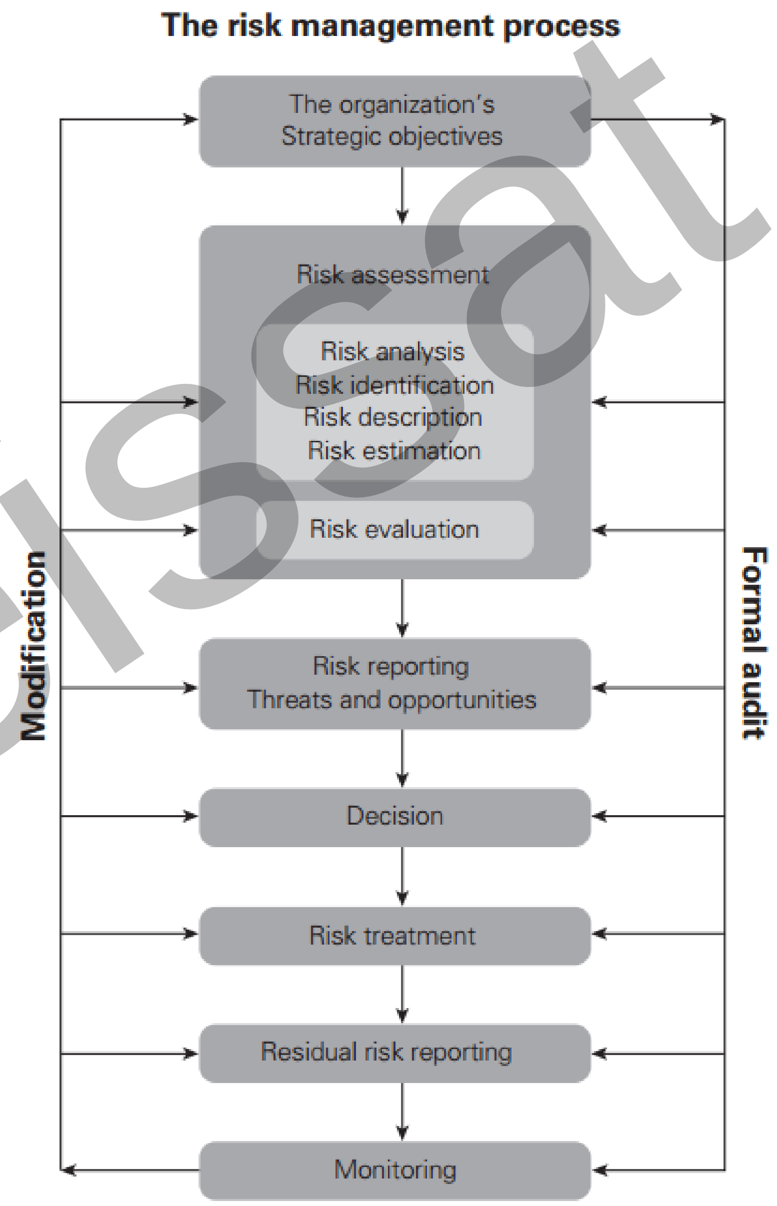
- Ensure that strategic decision that appear to be high risk are taken on an informed basis
- Improve in the robustness of decision-making activities
- Risk attitude vs Risk appetite
  - Risk attitude : indicate the way organization perceived the probability and the impact of uncertainty .
  - Risk appetite: indicate the amount of risk an organization is willing to seek accept in pursuit of its long-term objectives

Risk management & the Bow-Tie



Introduction to ERM

- **Enterprise Risk Management**
- **Integrated or holistic approach**



Introduction to *Enterprise Risk Management* (ERM)

' *ERM is a strategic business discipline that supports the achievement of an organization's objectives by addressing the full spectrum of its risks and managing the combined impact of those risks as an interrelated risk portfolio*'

Risk and Insurance Managers Society (RIMS)

ERM should be and should respond

PACED

- **P**roportionate to the level of risk within the organization;
- **A**ligned with other business activities;
- **C**omprehensive, systematic and structured;
- **E**mbedded within business procedures and protocols;
- **D**ynamic, iterative and responsive to change.

Responses to hazard risk

- Tolerate
- Treat
- Transfer
- Terminate

Responses to opportunity risks

- Explore
- Exploit
- Expand
- Exist
- Exit

Benefits: MADE2

- **M**andatory- conformity with applicable rules, regulations and mandatory obligations.
- **A**ssurance- The board and audit committee of an organization will require assurance that risk management and internal control activities comply with PACED.
- **D**ecision making- appropriate risk-based information is available to support decision making.
- **E**ffective and **e**fficient core processes- effective and efficient strategy, tactics, operations and compliance ensure the best outcome with reduced volatility of results.

Risk management standards

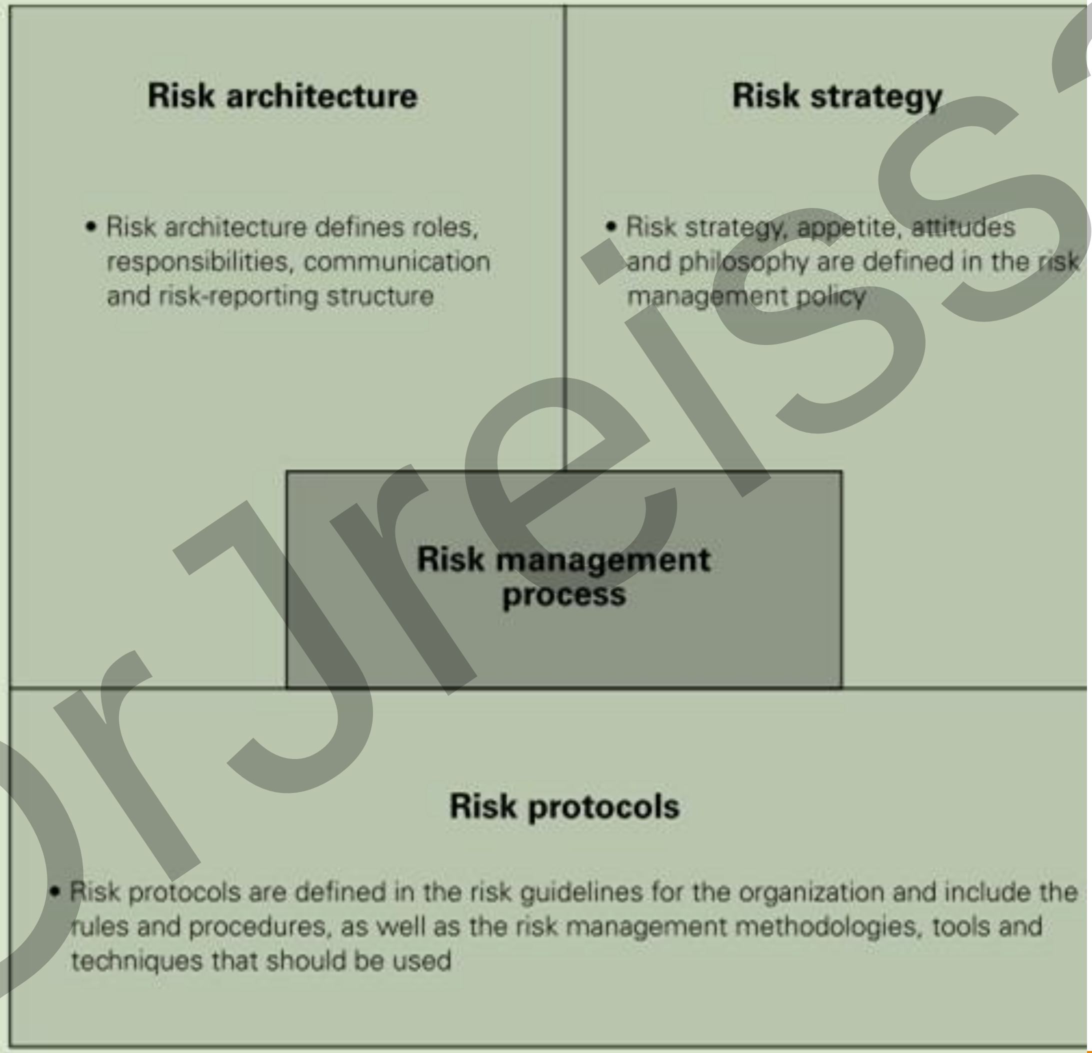
- A risk management standard sets out the overall approach to the successful management of risk, including a description of the risk management process, together with the suggested framework that supports that process.

Standard	Description
ISO 31000 (2018)	Standard published by the International Standards Organization (2018)
COSO ERM cube	Framework produced by the Committee of Sponsoring Organizations of Treadway Commission

- Wide use to measure how organizations manage risk:
  - Listed companies, NYSE (SOX), London Stock Exchange (FRC)

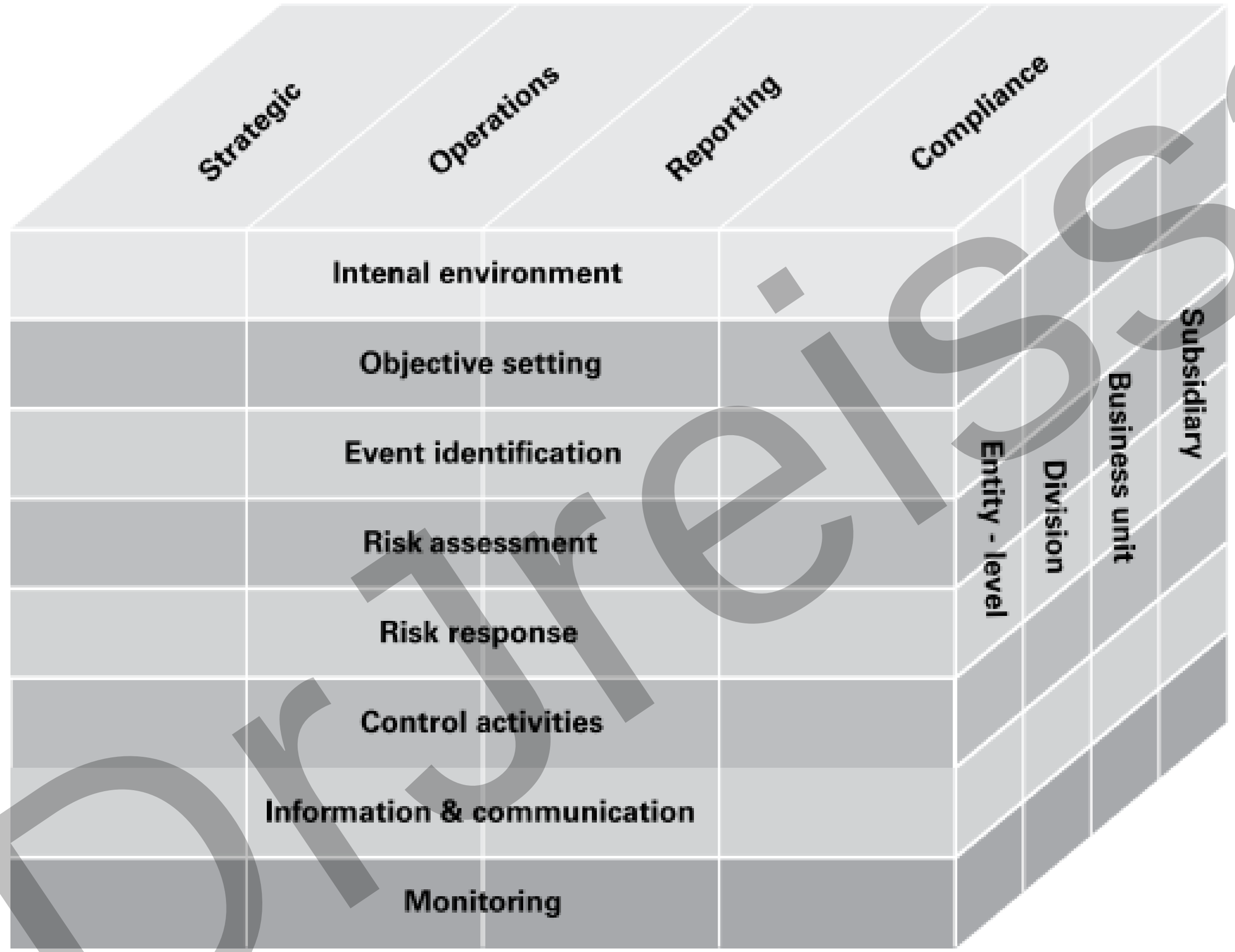
RASP: Risk, Architecture, Strategy, Protocols

Figure 4.1 Components of the RM context



COSO ERM cube

Figure 4.3 COSO ERM cube



SOURCE COSO Enterprise Risk Management: Integrated Framework, © 2004, Committee of Sponsoring Organizations of the Treadway Commission (COSO).

COSO (Committee of Sponsoring Organization of the Treadway Commission) ERM cube (Con't)

- Internal environment
  - Encompasses the tone of an organization and sets the basis for how risk is viewed and addressed
- Objective setting
  - Before management can ID potential events affect their achievement
- Event assessment
  - Internal and external affecting achievement of objectives must be ID
- Risk response
  - Avoiding, accepting, reducing, or sharing risk
- Control activities
  - Policies & procedures are established & implemented to help ensure the risk responses are effectively carried out.
- Information and communication - so people can fulfil their responsibilities
- Monitoring & modification if necessary

Context for risk management

Three components:

internal, external and risk management context

FIRM / SWOT (internal),

Finances, Infrastructure, Reputation And/Or Marketplace

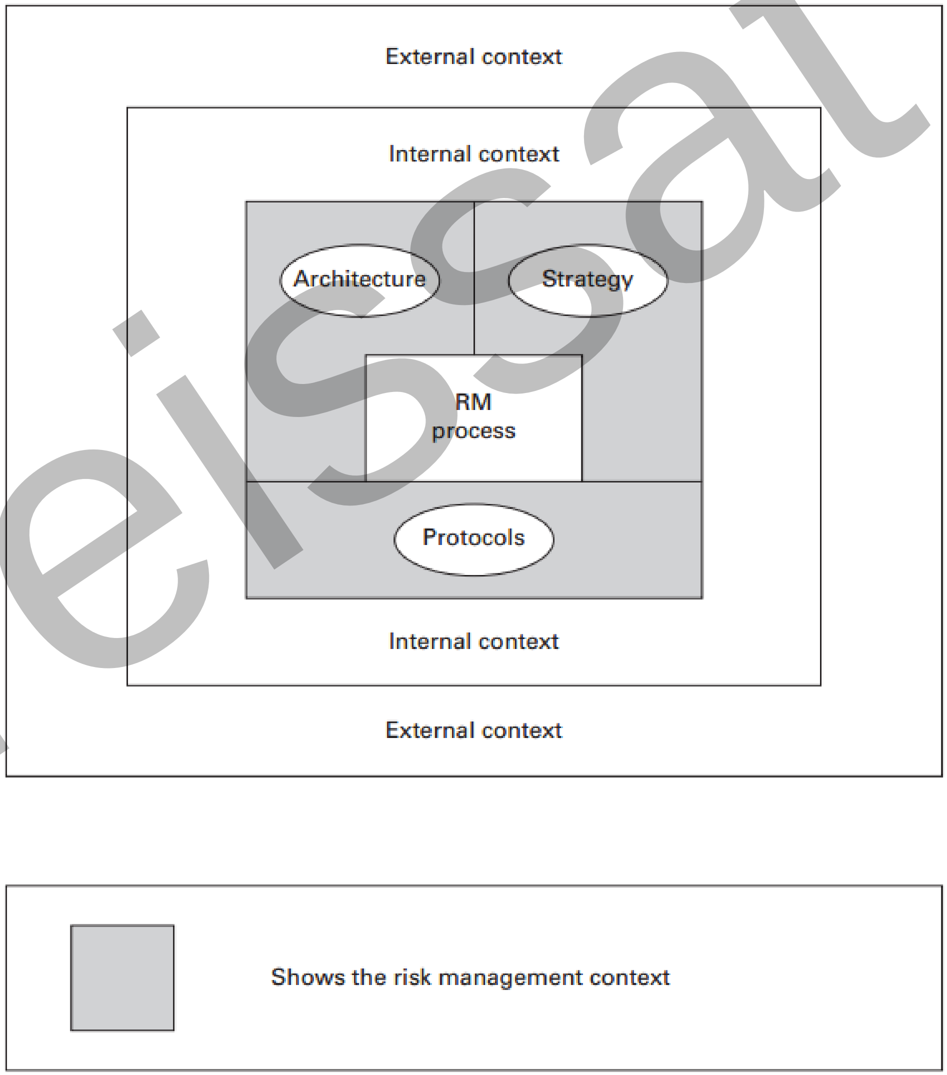
PESTLE (external)

Political, Economic, Social, Technological, Legal And Environmental/Ethical

LILAC (RM context)

Leadership, Involvement, Learning, Accountability And Communication

Figure 5.1 Three components of context



Risk registers

- Documents the significant risks facing the organization or the project:
  - Category, source, consequence, levels, controls and mitigations, owners
- Established practice for many risk managers
- Agreed record of identified risks and control activities
- Use of technology to integrate datasets and analyse information
- Positives/negatives of using a risk register

Any Questions?