



مجموعة جامعة
الجميع للذكاء
للتعليم القابضة

MIDOCEAN
UNIVERSITY
BY EVERYONE'S SMART UNIVERSITY

Operational & Strategic Risk Management

PMG630

Lecture 1

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Introduction to operational risk

Brief History Of Operational Risk:

In the early 1990s, the term operational risk was first officially used in the finance industry with the purpose of identifying fraudulent financial reporting. However, by the early 2010s, operational risk, and the management thereof, has acquired a broader description and acceptance. Nowadays, it can be broadly described as having the goal to reduce or mitigate the possibility of something going wrong in any type of operation including, but not limited to, financial operations.

What Is Operational Risk?

Operational risk is the risk of loss resulting from ineffective or failed internal processes, people, systems, or external events that can disrupt the flow of business operations.

*Operational risk can refer to both the risk in **operating an organization** and the **processes management** uses when implementing, training, and enforcing policies.*

Operational Risk Goal

The goal in the operational risk management function is to focus on the risks that have the most impact on the organization and to hold accountable employees who manage operational risk.



Hazards, Risks, and Accidents

Hazards, Risk, and Accidents:

These three terms—accidents, hazards, and risks—are very important, related, but distinct concepts that form the foundation of operational risk management.

Hazards, Risks, and Accidents

A **hazard** is any source of **potential** damage, harm or adverse health effects on something or someone.

Basically, a hazard is the potential for harm or an adverse effect (for example, to people as health effects, to organizations as property or equipment losses, or to the environment).

Hazards, **Risks**, and Accidents

Risk is the chance or probability that a person will be harmed. or experience an adverse health effect if exposed to a hazard. It may also apply to situations with property or equipment loss, or harmful effects on the environment.

Hazards, Risks, and **Accidents**

Accidents:

An unforeseen and unplanned event or circumstance Their meeting was an accident.

Lack of intention or necessity : chance They met by accident rather than by design.

An unfortunate event resulting especially from carelessness or ignorance was involved in a traffic accident.

Examples of operational

Operational Risk Include:

- Employee conduct and employee error.
- Breach of private data resulting from cybersecurity attacks.
- Technology risks tied to automation, robotics, and artificial intelligence.
- Business processes and controls.
- Physical events that can disrupt a business, such as natural catastrophes.
- Internal and external fraud.

Table 1.1. Comparison of accident, hazard, and risk

Accident <i>noun</i> Event that is both unintended and undesirable <hurt in an <i>accident</i>> Accidental <i>adjective</i> Being unintended <<i>accidental</i> damage>
Hazard <i>noun</i> Objects, actions, processes, or condition that may contribute toward the occurrence of an accident <debris on the road is a <i>hazard</i> for road accidents> Hazardous <i>adjective</i> Potential to cause an accident; Actually contributing toward a particular accident; or Causes a particular accident, partly or entirely.
Risk <i>noun</i> (also risk event) Event with undesirable consequences without specific regards to intent Includes accidents Risky <i>adjective</i> High magnitude of various properties associated with risk <skydiving is <i>risky</i>> <drinking and driving is risky behavior> Riskier <i>adjective</i> Higher chance of occurrence of a risk event or higher consequence if they occur, or both <skydiving is <i>riskier</i> in bad weather>

Importance Of systems approach

What is a system?

- A system can be described as a collection of interrelated elements contributing toward a common goal.
- As an example, an automobile can be described as a system made up of a collection of elements (transmission, power, electronics, and other elements) all contributing toward the common goal of transporting passengers and cargo.

ways to characterize a system

2. What are the ways to characterize a system?

- A system can be characterized by the means of the elements that make them up, their objectives, or the nature of their interrelationships.
- For example, a modern automobile can be characterized by its automatic transmission, four-wheel drivetrain, electronic ignition, six cylinder engines, antilock brakes, and other elements that make up the particular automobile.
- This same system can also be characterized by how its elements work together.

3.What is a systems approach?

- A systems approach pertains to the approach of analyzing an entity by recognizing the elements that make it up, their objectives and their interrelationships. This approach is often employed by analysts in various fields or disciplines of applied sciences, for example, engineering, pure sciences, and social sciences.

Recognizing goals And objectives

4. What is the importance of recognizing goals And objectives?

- For the purpose of operational risk management, recognizing goals and objectives of elements as individuals and the system that they form as a whole would lend credibility to an analyst's statement of whether the events are intentional or not and if the consequences are desirable or undesirable. As the previous section emphasized, intent and consequences are important in describing accidents, hazards, and risks, which can be separately viewed as obstacles or impediments to the achievement of goals and objectives.

recognizing interrelationships among elements of a system

5.What is the importance of recognizing interrelationships among elements of a system?

- Part of effective operational risk management is understanding the sequence of events that eventually lead to accidents. This sequence of events, in many ways, is within the realm of how various elements of the system are interrelated. This recognition of sequence of events is important in any attempt to prevent the occurrence of a risk event or reduce the consequence if it does occur.

recognizing system boundaries

6.What is the importance of recognizing system boundaries?

- Part of operational risk management, particularly the management aspect, implies some degree of control on how elements of a system will behave or relate to each other. Recognizing system boundaries is an acknowledgement of the degree of control one may have over these elements. Elements that, for some reason or another, do not lend themselves to control and are often designated as outside the system boundary.

Operational Risk and Operational Risk Management

1 . what is operation?

- In the context of a systems approach, operation can be described as a sequence of processes designed to attain the objectives of the elements or the system as a whole. The operation of an automobile may be described as processes in the following sequence:

All these processes are part of operating an automobile to transport passengers and cargo. In a production system, operations may pertain to the sequence of processes—obtaining raw materials, performing mechanical and chemical processes, storage, inspection, movement, and eventual delivery to the users—all designed to attain the goals of the production system.

2. What is operations management?

- Operations management pertains to the design and control of the operations, usually in the area of production and providing services. As an example, in building a new production line, part of operations management is the design (or procurement) of the machines that will be needed, the identification of needed skills and the hiring of personnel with these skills, the raw materials needed, and a multitude of other items. Once this production line is physically installed, part of operations management is the control of the production line to produce the product that it is designed to produce at the right quantity and quality and at the right time.

objectives of operations management

3. What are the objectives of operations management?

•The overall objective of operations management on a particular system is to design and control operations to attain the system goals. For a production system, some of these goals are possibly the following:

- Minimize total cost of production.
- Minimize disruption in delivery of finished products.
- Minimize the number of defective products.
- Maximize return (e.g., profit).

4. What is operational risk management?

- The concept of risk has been described earlier, simply as potential events with undesirable consequences (noun). The following are some of the ways of describing operational risks:
- “the risk of loss resulting from inadequate or failed internal
- processes, people, and systems or from external events”
- “a measure of the link between a firm’s business activities and
- the variation in its business results.

Examples of operational

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classification Of Operational Risk events

- Operational risk events are often classified in some manner to help analysts and managers to better address the risks. The manner of categorization depends on the field of application and industry. One way to categorize operational risks is by identifying distinct elements of the system that can be construed as the primary cause of the risk event.

Table 1.2. Classification of operational risk based on primary cause⁹

Classification	Description	Examples
Human	Risk events that are primarily caused by humans, both intentional and not	Fraud; breaches of employment law; unauthorized activities; loss or lack of key personnel; inadequate training; inadequate supervision; fatigue; lack of action
Process	Risk events that are primarily caused by activities performed by elements of the system	Designed or authorized process not fit for purpose; errors caused by models
Information	Risk events resulting from inaccurate, false, or untimely information	Late information; corrupted data; inaccurate information, mismatched unit of measure
Materials	Risk events resulting from defective or inappropriate materials	Concrete that are too soft; metals that corrode too easily; plastics that are too toxic

Machines	Risk events caused by malfunctioning machines and equipment	Machine breakdown; imprecise machine performance
External events	Risk events caused by elements external to the system	Cyber hacking; failure in outsourcing; extreme weather; unfair regulations; political issues; unfair competition; fragmented market

Table 1.3. Classification of operational risk based on origin¹⁰

Classification	Description	Examples
Organizational	Risk events originating from humans and their roles in the organization	Noncompliance to regulation; under-skilled technicians
Technical	Risk events originating from nonhuman aspects of the system	Late information; machine break-down
Social	Risk events originating from humans whose roles may be outside the organization	Crime; unfair competition
Political	Risk events originating from policies and regulation imposed by government or other authorities	Unfair regulations
Environmental	Risk events originating from the natural environment	Extreme weather

Table 1.4. Classification of operational risk based on consequence

Classification	Description	Examples
Safety	Risk events resulting in injury, death, or failure in human health	Machine failure resulting in injury to the operator
Financial	Risk events resulting in financial losses	Unfair regulations resulting in lost revenue
Legal	Risk events resulting in legal suits	Noncompliance to regulation resulting in suit from the government
Security	Risk events resulting in deterioration of protection of valuable assets	Cyber hacking resulting in theft of confidential information

References

Resources:

Operational Risk Management

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Chapter 1