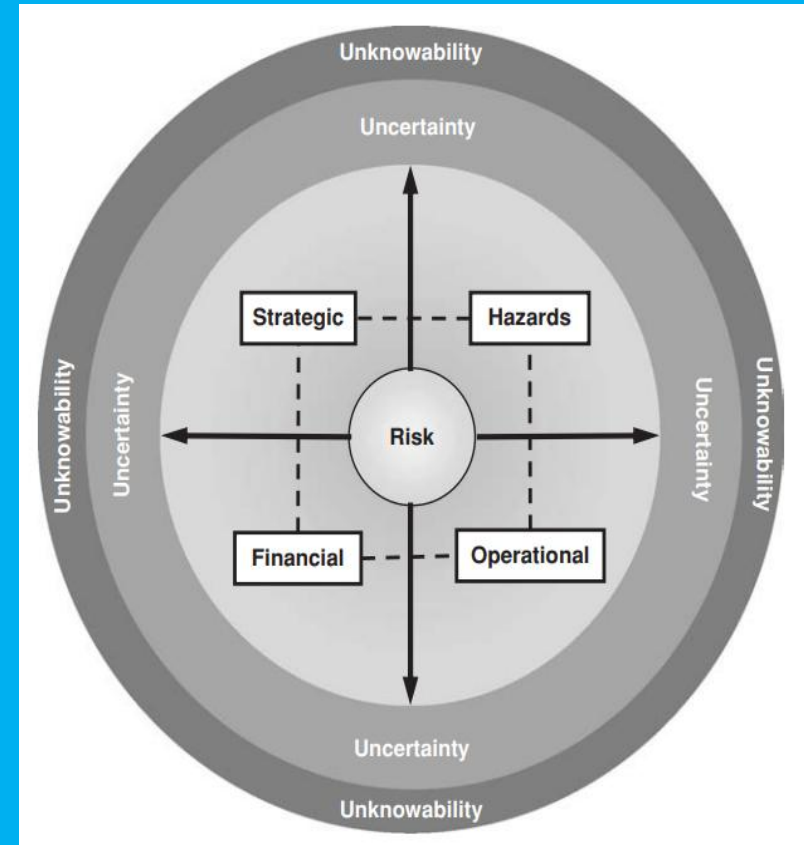


Strategic And Operational Risk Management

PMG 630

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Lecture ① : Introduction To Operational Risks

- 1. The concept of risk (Hazards, Risks, and Accidents)**
- 2. Types of corporate risks**
- 3. Brief history of Operational risk**
- 4. Operational Risk and Operational Risk Management**
- 5. Objectives of operations management**
- 6. Operational risk management**
- 7. Classification Of Operational Risk events**
- 8. The importance of a systems approach**
- 9. Conclusion**

The concept of risk

What is a risk ?

- ❑ Definition: Risk means future uncertainty about deviation from the expected outcome, and various risks arise due to uncertainty arising from various factors affecting the situation.
- ❑ So we note that...risk is related to uncertainty, and therefore it is a probability rate that is less than 100% and greater than 0%

Why take the risk?

- ✓ There is a positive relationship between risk and profit. “More risk, more profit, and so on. Less risk, less profit.” There is no action without relative risk

2-Hazards, Risks, and Accidents

Hazards, Risks, and Accidents

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

2-1. Hazards

What is Hazard ?

- ❖ To put it simply, a hazard is something that does not directly cause harm but has the potential to cause harm or loss.
- ❖ To put it simply More, a hazard is something that can cause harm, so hazard is source of danger

➤ **For example,**

2-1-1. Hazard Examples, Around the House



Sharp Objects



Poisoning



Falls

- **Many of these accidents are preventable and dealing with a serious accident that could have been avoided can lead to a lifetime of guilt.**
 - Accidents in the home claim 18,000 lives each year in America alone.
 - It is the common household hazards that account for 21 million medical visits annually.
 - it costs around \$220 billion a year.

2-2. Risks

- **risk, is a combination of two things – the chance that the hazard will cause harm and how serious that harm could be.**
- **We previously said that risk is the chance or probability of harm occurring, and if harm occurs, how serious is it?**
- **For example, crossing a road - the cars and other traffic are the main hazards; and your mental calculation of the risk is a combination of how likely it is that you'll be hit by a vehicle, along with how seriously you might be injured. And, there are things that could affect the likelihood and there are things that could affect the severity.**

2-3. Accidents

Accident

- **An event or series of events that results in death, injury, loss of system or service, or environmental damage.**
- Accidents: So, accidents are a term that makes us anxious about “an annoying word,” especially if they are characterized as unexpected and unplanned.
- ✓ Or say an unfortunate event resulting in particular from negligence or ignorance, a traffic accident, for example, or a fall from an escalator
- ✓ There are incidents that are happy for some and painful for others

2-4. Accident, Hazard, Risk “ the meaning “

Table 1.1. Comparison of accident, hazard, and risk

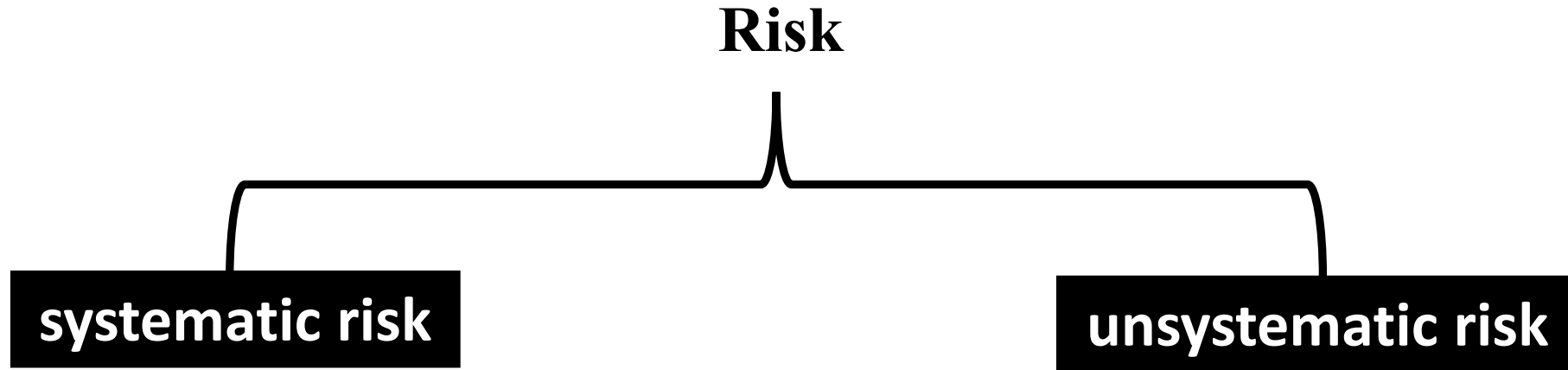
Accident <i>noun</i> Event that is both unintended and undesirable <hurt in an <i>accident</i>> Accidental <i>adjective</i> Being unintended <<i>accidental</i> damage>
Hazard <i>noun</i> Objects, actions, processes, or condition that may contribute toward the occurrence of an accident <debris on the 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>

2-5. Comparison between, Hazard and Risk



- For example, it's possible that a bottle of bleach could be used incorrectly, causing harm. But you need to ask, how probable is it that this is going to happen? Until an action has actually occurred, it is only a hazard, not a risk.
- Another example could be working at heights. Standing on top of a tall building is a hazard. The risk is how probable will you slip or step off the building and cause harm to yourself.

3. Types of corporate risks



- The systematic risk is the result of external variables that cannot be controlled, are not specific to the industry or security, and affect the entire market.
- Unsystematic risk refers to risks that arise from controlled variables that are known, are industry or security specific, and can be controlled.

3-1. Systematic Risk Vs Unsystematic Risk

Comparison Chart

BASIS FOR COMPARISON	SYSTEMATIC RISK	UNSYSTEMATIC RISK
Meaning	Systematic risk refers to the hazard which is associated with the market or market segment as a whole.	Unsystematic risk refers to the risk associated with a particular security, company or industry.
Nature	Uncontrollable	Controllable
Factors	External factors	Internal factors
Affects	Large number of securities in the market.	Only particular company.
Types	Interest risk, market risk and purchasing power risk.	Business risk and financial risk
Protection	Asset allocation	Portfolio diversification

3-2. Types of corporate risks

Financial risk

- Credit Risk
- Market risk
- Liquidity risk

Non- Financial risk

- Operational Risk
- Strategic Risk
- Solvency Risk
- Tail Risk
- Model Risk
- Compliance Risk
- Legal Risk
- Settlement Risk
- It risk
- Climate risk
- Reputation risk

3-3. Financial & Non- Financial Risks

What Is Financial Risk?

- ✓ Financial risk is the possibility of losing money on an investment or business venture. Some more common and distinct financial risks include credit risk, liquidity risk, and operational risk.



3-4. Financial & Non- Financial Risks

What is Non-Financial risk?

- ✓ NFR is a broad term that is usually defined by exclusion, that is, any risks other than the traditional financial risks of market, credit, and liquidity
- ✓ When we are talking about non-financial risk, be clear that we are talking about operational and strategic risk.



4-Brief History Of Operational Risk

➤ (Basel Committee), which was established in 1974, Since then, risk management has spread beyond the financial and banking industries. The Integrated Internal Control Framework was issued in 1992.

▪ Therefore, in the early 1990s, the term operational risk was first formally used in the finance industry for the purpose of identifying fraudulent financial reporting.

By the early 2010s, operational risk and its management had gained 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 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:
 1. Fastening the seatbelt
 2. Engaging the brake pedal
 3. Turning on the ignition
 4. Placing the gear in the right setting
 5. Disengaging the brake pedal
 6. Engaging the gas pedal ... and so on.

5-1. Operational Risk and Operational risk Management

What is Operations Management ?

- ✓ Operations management is the administration of business structure, practices, and processes to enhance efficiency and maximize profit. It refers to the management of functions that a business needs to run effectively day-to-day, including:
 - Overseeing multiple departments and providing goals
 - Overseeing and streamlining processes
 - Balancing revenue and costs
 - Developing strategic plans
 - Production, logistics, and supply chain

5-2.Operations Management

✓ We can say :

- Operations management is generally described as the planning, arranging, and controlling activities that change an organization's raw materials or inputs into finished products and services.
- The overall activities covered by operations management include product creation, development, manufacturing and distribution. The concept also relates to various activities such as inventory control, purchasing control, quality control, logistics, warehousing, and evaluation.
- ✓ Since operations management covers the entire operations of an organization, it mainly focuses on the efficiency and effectiveness of a company's operations.

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:
- Produce the right quantity and quality products.
 - Minimize shortages in raw materials, machine resources, and needed personnel.
 - Minimize total cost of production.
 - Minimize disruption in delivery of finished products.
 - Minimize the number of defective products.
 - Maximize return (e.g., profit).

5-4. Operational Risk and Operational risk Management

What is operational risk management?

- ❑ Operational risk management (ORM) is a process focused on identifying, assessing, prioritizing, and mitigating risks that arise from an organization's day-to-day operations and business workflows.
- ❑ It involves the systematic process of understanding, managing, and monitoring risks to minimize the potential negative impact on an organization's objectives and outcomes.



5-5.operational risk management

We can say ...

- 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.

What are operational risks according to the Basel Committee concept?

- ❑ Operational Risk is described by the Basel Committee on Banking Supervision as "the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events.

As such, operational risk captures business continuity plans, environmental risk, crisis management, process systems and operations risk, people related risks and health and safety, and information technology risks."

Example of the concept

5-7. Examples of operational risk

- Employee conduct and employee error
- Breach of private data resulting from cyber attacks
- Technology risks tied to automation, robotics, and artificial intelligence
- Business processes and controls
- Development and introduction of new products
- Physical events, such as natural disasters
- Internal and external fraud
- Workplace safety risks

❖ We can say :

A poorly trained employee may directly lose the company a sales opportunity, or the company's reputation can suffer indirectly from poor customer service.

6.Operational Risk Management Goals

- 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.
- ✓ As the name suggests, the primary objective of operational risk management is to mitigate risks related to the daily operations of an organization. The practice of Operational Risk Management focuses on operations and excludes other risk areas such as financial risks.



6-1. Operational Risk Management Goals

Operational Risk Management proactively seeks to protect the organization by eliminating or minimizing risk.

This is The main goal....

7. 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.

7-1. The 7 types of operational risk

- Classifying risks according to the category to which they belong makes it easier to identify them, Here are the 7 types of operational risk that exist so that you can recognize them within your company.

1. Internal fraud
2. External fraud
3. Technological failures
4. Process execution and management
5. Labor Relations and Workplace Safety
6. Damage to tangible assets
7. Customers, products and business practices

7-2. Classification Of Operational Risk Based on primary cause.

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

7-3. Classification Of Operational Risk Based on primary cause.

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

7-4. Classification Of Operational Risk Based on Origin

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

7-5. Classification Of Operational Risk Based on Consequence

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

8. 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.

8-1. 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.

8-2. systems approach

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.

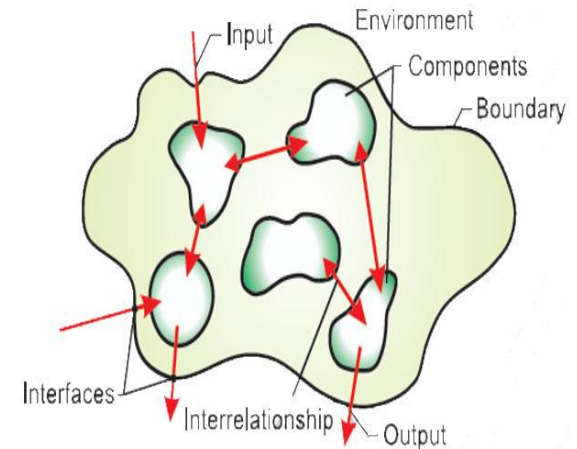
8-3. Recognizing goals And objectives

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.

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.



8-5. Recognizing system boundaries

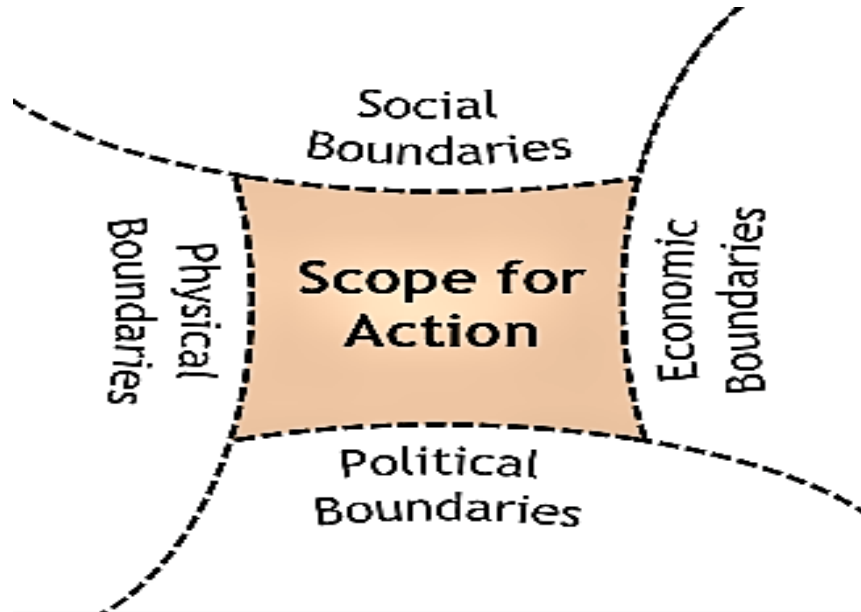
6. What is the importance of recognizing system boundaries?

- 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.

8-6. Recognizing system boundaries

- System boundaries are the limits or borders that separate a system from its surroundings.
- They can be physical, logical, temporal, spatial, functional, or conceptual, depending on the purpose and perspective of the analysis.
- System boundaries help to define the scope, context, and interfaces of a system, as well as its inputs, outputs, and feedback loops. System boundaries are not fixed or absolute, but rather flexible and relative, depending on the level of abstraction, the stakeholder needs, and the system goals.

8-7. Recognizing system boundaries, **EXAMPLE**



- Physical, social, economic and political system boundaries define the (provisional) scope for action for an intervention in Sustainable Sanitation and Water Management. Source: SEECON (n.y.)

9. Conclusion

- Through the lecture...we certainly learned the following:
- The concept of risk in general
- We knew the difference between risk, hazards and accidents
- We know the types of institutional risks
- We reviewed a brief history of operational risk
- We learned what operational risk and operational risk management are
- We know the objectives of operations management
- What is operational risk management?
- We have presented examples of operational risks
- We know the classification of operational risk events

10. References & Resources

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- ✓ Operational Risk Management: Overview and Guide, Vice Vicente,
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كل التوفيق لكم

My Best Wishes ...
Dr. Ayman Hassan

