

Direct Your Learning



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Introduction to Risk Management

Educational Objectives

After learning the content of this assignment, you should be able to:

- ▶ Describe each of the following in the context of risk:
 - Uncertainty
 - Possibility
 - Possibility compared with probability
- ▶ Explain how the following classifications of risk apply and how they help in risk management:
 - Pure and speculative risk
 - Subjective and objective risk
 - Diversifiable and nondiversifiable risk
 - Quadrants of risk (hazard, operational, financial, and strategic)
- ▶ Describe the three financial consequences of risk.
- ▶ Describe the basic purpose and scope of risk management in terms of the following:
 - How risk management is practiced by individuals and organizations
 - The basic distinction between traditional risk management and enterprise-wide risk management
- ▶ Describe the following elements for property, liability, personnel, and net income loss exposures:
 - Assets exposed to loss
 - Causes of loss, including associated hazards
 - Financial consequences of loss
- ▶ Describe the benefits of risk management and how it reduces the financial consequences of risk for individuals, organizations, and society.

Outline

- Understanding and Quantifying Risk
- Risk Classifications
- Financial Consequences of Risk
- Basic Purpose and Scope of Risk Management
- Loss Exposures
- Risk Management Benefits
- Risk Management Program Goals
- The Risk Management Process
- Summary

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Educational Objectives, continued

- ▶ Summarize pre-loss and post-loss risk management program goals and the conflicts that can arise as they are implemented.
- ▶ Describe each of the steps in the risk management process.

Introduction to Risk Management

UNDERSTANDING AND QUANTIFYING RISK

Although risk may intuitively seem undesirable, it can yield both positive and negative outcomes. Opportunities cannot be pursued, and reward cannot be obtained, without incurring some risk. Because of this risk/reward relationship, individuals and organizations seek to maximize reward while minimizing the associated risk. Risk management helps individuals and organizations to avoid, prevent, reduce, or pay for the negative outcomes of risk so that opportunities for reward can be pursued. Understanding and quantifying risk are the logical starting point for learning how to use risk management.

Risk is a term regularly used by individuals in both their personal and professional lives and is generally understood in context. However, properly defining risk is often difficult because it can have many different meanings. As used in this discussion, risk is defined as the uncertainty about outcomes, with the possibility that some of the outcomes can be negative. Risk can be quantified by knowing the probability of the possible outcomes. See the exhibit “Industry Language—Risk.”

Industry Language—Risk

Risk can be used in many contexts in risk management and insurance and can have any of the following meanings:

- The subject matter of an insurance policy, such as a structure, an auto fleet, or the possibility of a liability claim arising from an insured's activities
- The insurance applicant (the insured)
- The possibility of bodily injury or property damage
- A cause of loss (or peril), such as fire, lightning, or explosion
- The variability associated with a future outcome

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Uncertainty and Possibility

The two elements within the definition of risk are these:

- Uncertainty of outcome
- Possibility of a negative outcome

First, risk involves uncertainty about the type of outcome (what will actually occur), the timing of the outcome (when the outcome will occur), or both the type and timing of the outcome. Consider an individual who buys a share of stock in a publicly traded corporation. This individual may experience a positive outcome if the value of the stock increases or a negative outcome if the value of the stock decreases. The timing of either outcome is uncertain because the individual does not know if or when the stock price is going to change or what the new stock price will be. Whether uncertainty involves what will actually happen, when something will happen, or both, it results from the inability to accurately predict the future.

Second, risk involves the possibility of a negative outcome. Possibility means that an outcome or event may or may not occur. The fact that something may occur does not mean that it will occur. For example, it is possible that an individual may be injured while driving to or from work, loading a truck at work, moving some furniture at home, or falling in an icy parking lot at the mall. However, the possibility that these events may occur does not mean that they will occur. Nonetheless, because of the possibility of a negative outcome (injury), risk exists.

Possibility and Probability

The possibility that something may occur does not indicate its likelihood of occurring. Possibility does not quantify risk; it only verifies that risk is present. To quantify risk, one needs to know the **probability** of the outcome or event occurring.

Unlike possibility, probability is measurable and has a value between zero and one. If an event is not possible, it has a probability of zero, whereas if an event is certain, it has a probability of one. If an event is possible, but not certain, its probability is some value between zero and one. Probabilities can be stated as a decimal figure (.4), a percentage (40 percent), or a fraction (four-tenths or two-fifths).

To help understand the difference between possibility and probability, consider the possibility that an individual will be injured in an auto accident while driving to or from work tomorrow. That person will not necessarily be injured in an auto accident tomorrow, and the fact that it is possible does not give any indication of its likelihood. The risk exists and has simply been identified.

Contrast this with there being a 5 percent probability that the same individual will be injured in an auto accident while driving to or from work

Probability

The likelihood that an outcome or event will occur.



tomorrow. This statement not only indicates that it is possible the individual will be injured tomorrow, it gives the likelihood. The risk has now been not only identified but also quantified.

Understanding the probability of various outcomes helps focus risk management attention on those risks that can be appropriately managed. Probability can also be used to help decide which activities (and associated risks) to undertake and which risk management techniques to use.

In the previous example:

- If the probability of injury while driving to or from work was 5 percent, and the probability of injury if the individual took the train to work was 1 percent, the individual may decide to take the train.
- However, if the risk of auto injury was reduced to 1 percent by driving a car with airbags and antilock brakes, and if it was more convenient and quicker to drive, then the individual may decide (cost permitting) to buy a new car with airbags and antilock brakes and then drive to work.

RISK CLASSIFICATIONS

Classifying the various types of risk can help an organization understand and manage its risks. The categories should align with an organization's objectives and risk management goals.

Classification can help with assessing risks, because many risks in the same classification have similar attributes. It also can help with managing risk, because many risks in the same classification can be managed with similar techniques. Finally, classification helps with the administrative function of risk management by helping to ensure that risks in the same classification are less likely to be overlooked.

These classifications of risk are some of the most commonly used:

- Pure and speculative risk
- Subjective and objective risk
- Diversifiable and nondiversifiable risk
- Quadrants of risk (hazard, operational, financial, and strategic)

These classifications are not mutually exclusive and can be applied to any given risk.

Pure and Speculative Risk

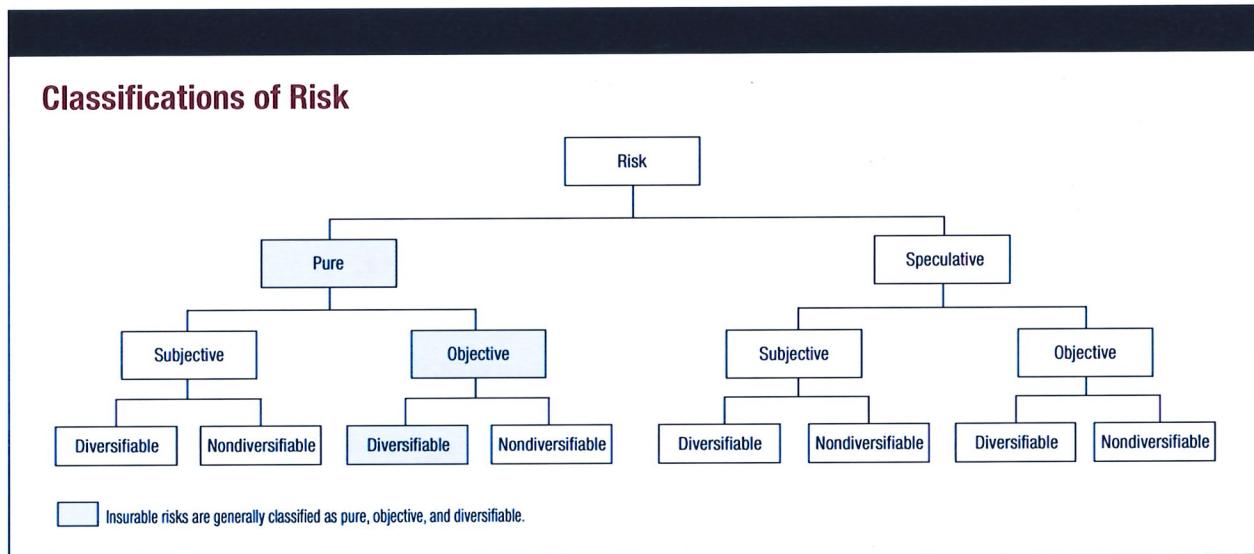
A **pure risk** is a chance of loss or no loss, but no chance of gain. For example, the owner of a commercial building faces the risk associated with a possible fire loss. The building will either burn or not burn. If the building burns, the owner suffers a financial loss. If the building does not burn, the owner's financial condition is unchanged. Neither of the possible outcomes would produce

Pure risk

A chance of loss or no loss, but no chance of gain.



a gain. Because there is no opportunity for financial gain, pure risks are always undesirable. See the exhibit “Classifications of Risk.”



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Speculative risk

A chance of loss, no loss, or gain.

In comparison, **speculative risk** involves a chance of gain. As a result, it can be desirable, as evidenced by the fact that every business venture involves speculative risks. For example, an investor who purchases an apartment building to rent to tenants expects to profit from this investment, so it is a desirable speculative risk. However, the venture could be unprofitable if rental price controls limit the amount of rent that can be charged.

Certain businesses involve speculative risks, such as these:

- **Price risk**—Uncertainty over the size of cash flows resulting from possible changes in the cost of raw materials and other inputs (such as lumber, gas, or electricity), as well as cost-related changes in the market for completed products and other outputs.
- **Credit risk**—Although a credit risk is particularly significant for banks and other financial institutions, it can be relevant to any organization with accounts receivable.

Credit risk

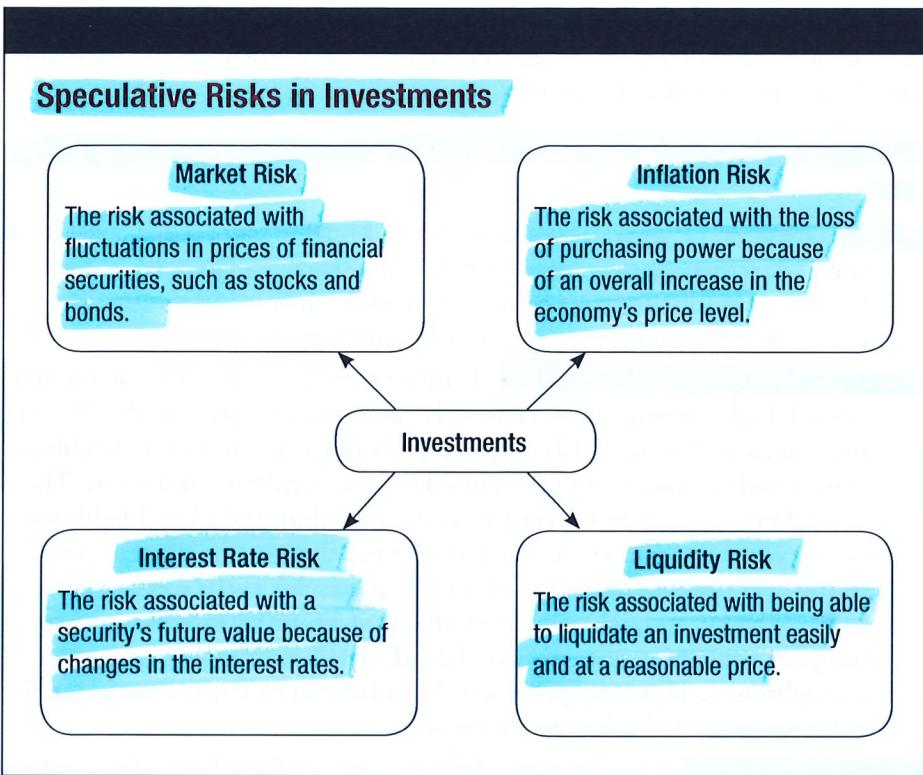
The risk that customers or other creditors will fail to make promised payments as they come due.

Financial investments, such as the purchase of stock shares, involve a distinct set of speculative risks. See the exhibit “Speculative Risks in Investments.”

Insurance deals primarily with risks of loss, not risks of gain; that is, with pure risks rather than speculative risks. However, the distinction between these two classifications of risk is not always precise—many risks have both pure and speculative aspects.

Distinguishing between pure and speculative risks is important because those risks must often be managed differently. For example, although a commercial





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building owner faces a pure risk from causes of loss such as fire, he or she also faces the speculative risk that the market value of the building will increase or decrease during any one year. Similarly, although an investor who purchases an apartment building to rent to tenants faces speculative risk because rental income may produce a profit or loss, the investor also faces a pure risk from causes of loss such as fire.

To properly manage these investments, the commercial building owner and the apartment owner must consider both the speculative and the pure risks. For example, they may choose to manage the pure risk by buying insurance or taking other measures to address property loss exposures. The speculative risk might be managed by obtaining a favorable mortgage and maintaining the property to enhance its resale value.

Subjective and Objective Risk

When individuals and organizations must make a decision that involves risk, they usually base it on the individual's or organization's assessment of the risk. The assessment can be based on opinions, which are subjective, or facts, which are objective.

Because it is based on opinion rather than fact, subjective risk may be quite different from the actual underlying risk that is present. In fact, subjective

Subjective risk

The perceived amount of risk based on an individual's or organization's opinion.



Objective risk

The measurable variation in uncertain outcomes based on facts and data.

risk can exist even where **objective risk does not**. The closer an individual's or organization's subjective interpretation of risk is to the objective risk, the more effective its risk management plan will likely be.

The reasons that subjective and objective risk can differ substantially include these:

- **Familiarity and control**—For example, although many people consider air travel (over which they have no control) to carry a high degree of risk, they are much more likely to suffer a serious injury when driving their cars, where the perception of control is much greater.
- **Consequences over likelihood**—People often have two views of low-likelihood, high-consequence events. The first misconception is the “It can’t happen to me” view, which assigns a probability of zero to low-likelihood events such as natural disasters, murder, fires, accidents, and so on. The second misconception is overstating the probability of a low-likelihood event, which is common for people who have personally been exposed to the event previously. If the effect of a particular event can be severe, such as the potentially destructive effects of a hurricane or earthquake, the perception of the likelihood of deaths resulting from such an event is heightened. This perception may be enhanced by the increased media coverage given to high-severity events.
- **Risk awareness**—Organizations differ in terms of their level of risk awareness and, therefore, perceive risks differently. An organization that is not aware of its risks would perceive the likelihood of something happening as very low.

Both risk management and insurance depend on the ability to objectively identify and analyze risks. However, subjectivity is also necessary because facts are often not available to objectively assess risk.

Diversifiable and Nondiversifiable Risk

Diversifiable risk

A risk that affects only some individuals, businesses, or small groups.

Diversifiable risk is not highly correlated and can be managed through diversification, or spread, of risk. An example of a diversifiable risk is a fire, which is likely to affect only one or a small number of businesses. For instance, an insurer can diversify the risks associated with fire insurance by insuring many buildings in several different locations. Similarly, business investors often diversify their holdings, as opposed to investing in only one business, hoping those that succeed will more than offset those that fail.

Nondiversifiable risk

A risk that affects a large segment of society at the same time.

Examples of **nondiversifiable risks** include inflation, unemployment, and natural disasters such as hurricanes. **Nondiversifiable risks are correlated**—that is, their gains or losses tend to occur simultaneously rather than randomly. For example, under certain monetary conditions, interest rates increase for all firms at the same time. If an insurer were to insure firms against interest rate increases, it would not be able to diversify its portfolio of interest rate risks



by underwriting a large number of insureds, because all of them would suffer losses at the same time.

Systemic risks are generally nondiversifiable. For example, if excess leverage by financial institutions causes systemic risk resulting in an event that disrupts the financial system, this risk will have an effect on the entire economy and, therefore, on all organizations. Because of the global interconnections in finance and industry, many risks that were once viewed as nonsystemic (affecting only one organization) are now viewed as systemic. For instance, many economists view the failure of Lehman Brothers in early 2008 as a trigger event: highlighting the systemic risk in the banking sector that resulted in the financial crisis.

Systemic risk

The potential for a major disruption in the function of an entire market or financial system.

Quadrants of Risk: Hazard, Operational, Financial, and Strategic

Although no consensus exists about how an organization should categorize its risks, one approach involves dividing them into risk quadrants:

- Hazard risks arise from property, liability, or personnel loss exposures and are generally the subject of insurance.
- Operational risks fall outside the hazard risk category and arise from people or a failure in processes, systems, or controls, including those involving information technology.
- Financial risks arise from the effect of market forces on financial assets or liabilities and include **market risk**, credit risk, **liquidity risk**, and price risk.
- Strategic risks arise from trends in the economy and society, including changes in the economic, political, and competitive environments, as well as from demographic shifts.

Hazard and operational risks are classified as pure risks, and financial and strategic risks are classified as speculative risks.

The focus of the risk quadrants is different from the risk classifications previously discussed. Whereas the classifications of risk focus on some aspect of the risk itself, the four quadrants of risk focus on the risk source and who traditionally manages it. For example, the chief financial officer traditionally manages financial risk, and the risk manager traditionally manages hazard risk. Just as a particular risk can fall into more than one classification, a risk can also fall into multiple risk quadrants. For example, embezzlement of funds by an employee can be considered both a hazard risk, because it is an insurable pure risk, and an operational risk, because it involves a failure of controls. See the exhibit “Risk Quadrants.”

Organizations define types of risk differently. Some organizations consider legal risks as operational risk, and some may characterize certain hazard risks as operational risk. Financial institutions generally use the categories of

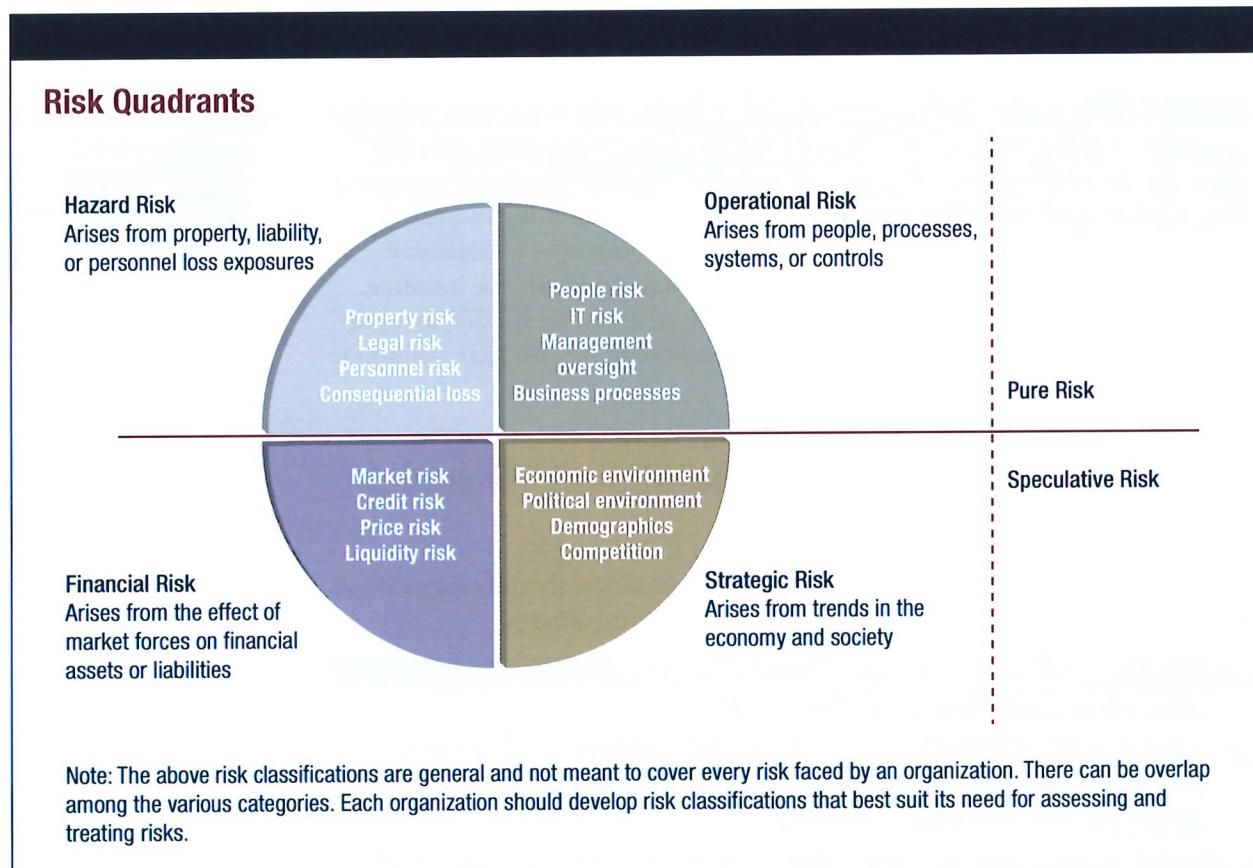
Market risk

Uncertainty about an investment's future value because of potential changes in the market for that type of investment.

Liquidity risk

The risk that an asset cannot be sold on short notice without incurring a loss.





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market, credit, and operational risk (defined as all other risk, including hazard risk). Each organization should select categories that align with its objectives and processes.

Apply Your Knowledge

The New Company manufactures electronic consumer products. The company's manufacturing plant is highly automated and located in the United States. However, it purchases components from three companies in Asia. The majority of its sales are in the U.S., but European sales represent a growing percentage.

Describe the types of risk New Company would have in each of the four risk quadrants.

Feedback: In the hazard risk quadrant, New Company would have property damage risks to its plant and equipment resulting from fire, storms, or other events. It would also have risk of injury to its employees and liability risks associated with its products.



In the operational risk quadrant, New Company would have risks from employee turnover or the inability to find skilled employees. It would also have business process risk related to how it manages its supply chain and information technology risk related to its automated manufacturing process.

In the financial risk quadrant, New Company would have exchange rate risk related to its European sales. It would also have price risk for raw materials and supplies.

Strategic risks include competition, economic factors that could affect consumer demand, and the political risk arising from countries in which the company's component suppliers are located.

New Company's insurer is Worldwide Insurance (WI). Describe the types of risk that WI would have in each of the four risk quadrants.

Feedback: In the hazard risk quadrant, WI would have exposures to all of the risks it insures for New Company and its other clients.

In the operational risk quadrant, WI's risks would include information systems risks, theft, and fraud.

In the financial risk quadrant, WI would have interest rate risk, adequacy of reserves, and matching durations of assets and claim payments.

Strategic risk would include competition; the global financial and economic environment; global political risk; changes in technology, such as self-driving cars; and regulatory risk.

FINANCIAL CONSEQUENCES OF RISK

Although it may be difficult to precisely calculate the financial consequences of risk, by considering all of its components and at least estimating its financial consequences, an individual or organization is better able to determine where to focus risk management efforts.

The financial consequences of risk faced by individuals or organizations can be broken into three components:

- Expected cost of losses or gains
- Expenditures on risk management
- Cost of residual uncertainty

Expected Cost of Losses or Gains

The first financial consequence of risk is the expected cost of losses or gains. In his seminal work on calculating the expected cost of losses or gains, Herbert W. Heinrich discussed the cost of one specific risk, the cost of risk



associated with industrial accidents (pure risk).¹ Industrial accidents can demonstrate the various costs that need to be accounted for when determining expected costs of losses.

Heinrich observed that not only do industrial accidents include the cost of the compensation paid to the injured employee, but they also include other, hidden costs, including these:

- Time lost by the injured employee
- Time lost by other employees who stop work
- Time lost by foremen, supervisors, or other executives
- Time spent on the case by first-aid attendants and hospital department staff (when not paid for by the insurer)
- Damage to the machine, tools, or other property or the spoilage of material
- Interference with production, failure to fill orders on time, loss of bonuses, payment of forfeits, and other similar causes of loss
- Continuation of the injured employee's wages in full after the employee's return to work—even though the employee's services may temporarily be worth less than normal value
- Loss of profit on the injured employee's productivity and on the idle machines
- Lost productivity because of employee excitement or weakened morale resulting from the accident
- Overhead per injured employee, that is, the expense of light, heat, rent, and other items that continue while the injured employee is not productive

Many of these hidden costs are indirect costs and are more difficult to measure than direct accident costs. Consequently, the overall effect of losses is much greater than the direct losses themselves. Therefore, it is important to identify and try to assign a value to hidden costs in order to get a reasonably accurate view of expected costs.

Calculating the expected cost of losses or gains for speculative risks is more complex than calculating pure risk. For example, suppose a manufacturer was considering adding a second plant to its production facilities. The manufacturer would have to consider all of the expected costs associated with all the pure risks of the new plant, including industrial accidents, as well as the costs or gains associated with the speculative risks. Those costs or gains may include the cost of raw materials, the financing costs for the capital to build the plant, the market price at which the manufacturer can sell its goods, or the expected demand for its products. All of these expected costs and/or gains need to be considered with speculative risks.



Expenditures on Risk Management

The second component of the financial consequences of risk is the individual's or organization's expenditures on risk management. The most widely known risk management technique used by individuals is risk financing by purchasing insurance. Homeowners insurance, auto insurance, health insurance, and life insurance are all risk financing measures used by individuals to manage some of the risks they face. Organizations tend to use a wider variety of risk control and risk financing techniques than do individuals. The expenditures on these activities are a financial consequence of risk.

Cost of Residual Uncertainty

The third component of the financial consequences of risk is the cost of residual uncertainty (cost of worry). Residual uncertainty is the level of risk that remains after individuals or organizations implement their risk management plans. This residual uncertainty is also influenced by an individual's or organization's subjective view of the risks to which they are exposed.

For example, if an individual is unduly concerned about a particular risk, he or she may overestimate the frequency or severity of it, resulting in a subjective interpretation of the true objective risk. Residual uncertainty can be minimized, but doing so is costly because more has to be spent on attempts to control or finance the risks involved.

The cost of residual uncertainty may be difficult to measure and is largely ignored in cost of risk studies. However, it may still have a significant effect on the ultimate financial consequences of risk for an individual or organization. For example, because it may be more costly to an employer to hire an employee who is perceived as presenting a high risk (for example, because he or she changes jobs frequently), the employer may not be willing to hire or will not be willing to pay a high salary for such an individual. This lost salary opportunity is the cost of residual uncertainty for the individual.

For organizations, the cost of residual uncertainty includes the effect that uncertainty has on consumers, investors, and suppliers. Consumers may not be willing to pay as much for products from organizations with a poor safety reputation, investors will require a larger rate of return on their investment from riskier organizations, and suppliers will be less willing to sell their supplies on credit to financially unstable organizations.

Individuals and organizations vary greatly as to how much residual uncertainty they are willing to accept. However, differences in willingness to accept uncertainty (risk) are beneficial to society and economic development. It allows different individuals and organizations to pursue a variety of risky activities that may offer substantial rewards, not just for the investors, but also for society as a whole.



BASIC PURPOSE AND SCOPE OF RISK MANAGEMENT

Risk management involves the efforts of individuals or organizations to efficiently and effectively assess, control, and finance risk in order to minimize the adverse effects of losses or missed opportunities.

Individuals practice risk management to protect their limited assets from losses and to help meet personal goals. For an organization, sound risk management adds value and helps to ensure that losses or missed opportunities do not prevent it from meeting its goals. While many organizations have traditionally focused their risk management efforts on pure risk, the emerging discipline of enterprise-wide risk management is focused on managing all of an organization's pure and speculative risks.

Risk Management for Individuals and Organizations

Risk management

The process of making and implementing decisions that will minimize the adverse effects of accidental losses on an organization.

In its simplest form, **risk management** includes any effort to economically deal with uncertainty of outcomes (risk). For individuals, risk management is usually an informal series of efforts, not a formalized process. Individual or personal risk management may be viewed as part of the financial planning process that encompasses broader matters such as capital accumulation, retirement planning, and estate planning.

Individuals and families often practice risk management informally without explicitly following a risk management process. For example, individuals purchase insurance policies to cover accidental or unexpected losses, or they contribute to savings plans so that they have money available to cover unforeseen events.

In smaller organizations, risk management is not usually a dedicated function, but one of many tasks carried out by the owner or senior manager. In many larger organizations, the risk management function is conducted as part of a formalized risk management program. A risk management program is a system for planning, organizing, leading, and controlling the resources and activities that an organization needs to protect itself from the adverse effects of accidental losses.

Most risk management programs are built around the risk management process. The risk management process is the method of making, implementing, and monitoring decisions that minimize the adverse effects of risk on an organization. Although the exact steps in an organization's risk management process may differ from the process discussed in this section, all risk management processes are designed to assess, control, and finance risk.



Traditional Risk Management and Enterprise-Wide Risk Management

Traditionally, the risk management professional's role has been associated with loss exposures related mainly to pure, as opposed to speculative, risks. This view excludes from the scope of risk management all loss exposures that arise from speculative risk, also referred to as business risk. Therefore, organizational risk management has focused on managing safety, purchasing insurance, and controlling financial recovery from losses generated by hazard risk.

Enterprise-wide risk management (ERM) is the term commonly used to describe the broader view of risk management that encompasses all types of risk. ERM is an approach to managing all of an organization's key risks and opportunities with the intent of maximizing the organization's value.

An ERM approach allows an organization to integrate all of its risk management activities so that the risk management process occurs at the enterprise level, rather than at the departmental or business unit level. How ERM is implemented in practice varies significantly among organizations, depending on their size, nature, and complexity.

LOSS EXPOSURES

Individuals and organizations incur losses when assets they own decrease in value. Situations or conditions that expose assets to loss are called loss exposures. In order to effectively manage risk, individuals and organizations must identify all the loss exposures they face.

Every loss exposure has three elements:

- An asset exposed to loss
- Cause of loss (also called a peril)
- Financial consequences of that loss

Loss exposure

Any condition or situation that presents a possibility of loss, whether or not an actual loss occurs.

These three elements can be described for each of these four basic types of loss exposures: property loss exposures, liability loss exposures, personnel loss exposures, and net income loss exposures.

Elements of Loss Exposures

The three elements are necessary to completely describe a loss exposure. For example, identifying a building (an asset exposed to loss) is not sufficient for describing that building as a loss exposure. It is also necessary to identify the causes of loss associated with that building (such as fire, flood, or hurricane) and the financial consequences of that loss (such as a decline in the market value of the building or in the income produced by the use of the building).



Asset Exposed to Loss

The first element of a loss exposure is an asset exposed to loss. This asset can be anything of value an individual or organization has that is exposed to loss. Assets owned by organizations can include property (such as buildings, automobiles, and office furniture), investments, money that is owed to them, and cash. In addition to these are assets that are often overlooked, including intangible assets (such as patents, copyrights, and trademarks) and human resources.

Individuals may have many of the same assets as organizations (property, money, investments, and so on). In addition, individuals may have intangible assets such as professional qualifications, a unique skill set, or valuable experience.

Cause of Loss

The second element of a loss exposure is cause of loss. Fire, windstorm, explosion, and theft are examples of causes of loss that present a possibility of loss to property.

Hazard

A condition that increases the frequency or severity of a loss.

Loss exposures and causes of loss that affect them can be influenced by hazards. For example, a fire hazard, such as storing oily rags next to a furnace, increases the frequency and/or severity of loss caused by fire. Insurers typically define hazards according to these four classifications:

- Moral hazard
- Morale hazard
- Physical hazard
- Legal hazard

Regardless of whether they are moral, morale, physical, or legal, hazards can have a compounding effect. For example, the loss frequency associated with a safe driver in a safe car is increased by either the physical hazard of an unsafe car or the moral hazard of an unsafe driver. The frequency is further increased by the compound effect of an unsafe driver in an unsafe car. Therefore, risk management and insurance professionals need to carefully monitor any situation that may involve multiple hazards.

Moral hazard

A condition that increases the likelihood that a person will intentionally cause or exaggerate a loss.

Examples of a **moral hazard** include intentionally causing, fabricating, or exaggerating a loss. For example, one moral hazard incentive is financial difficulty. Someone who is facing overwhelming debt might be tempted to intentionally cause a loss in an attempt to profit from the situation and thereby reduce or eliminate the debt.

Purchasing an insurance policy is another moral hazard incentive—some people might be inclined to behave differently once they enter into a contract that shifts the financial consequences of risk to another party. In insurance, this behavior can include filing false claims, inflating a claim on a loss that did occur, or intentionally causing a loss.



Driving carelessly, failing to lock an unattended building, or failing to clear an icy sidewalk to protect pedestrians are examples of **morale hazard**.

Both moral and morale hazards are behavior problems that can increase the frequency and/or severity of losses. The fundamental difference between these two types of hazard is intent. A moral hazard results from a deliberate act; a morale hazard results from carelessness or indifference.

A **physical hazard** is a condition of property, persons, or operations that increases the frequency and/or severity of loss. For example, a slip-and-fall accident is more likely to occur on an icy sidewalk, a fire is more likely to start in a building with defective wiring, and an explosion is more likely to occur in a painting area that has inadequate ventilation. Inadequate ventilation may also create environmental problems for workers and therefore increase the frequency and/or severity of workers compensation claims.

A **legal hazard** is a condition of the legal environment that increases the frequency and/or severity of loss. For example, courts in some geographic areas are much more likely to find in favor of the plaintiff or to grant large damages awards in liability cases than are courts in other areas. Various trends can also be legal hazards. For example, an increasing number of decisions against tobacco manufacturers would present a legal hazard for companies participating in the tobacco industry.

**Morale hazard
(attitudinal hazard)**

A condition of carelessness or indifference that increases the frequency or severity of loss.

Physical hazard

A tangible characteristic of property, persons, or operations that tends to increase the frequency or severity of loss.

Legal hazard

A condition of the legal environment that increases loss frequency or severity.

Financial Consequences of Loss

The third element of loss exposures is the financial consequences of the loss. The financial consequences of a loss depend on the type of loss exposure, the cause of loss, and the loss frequency and severity. Some financial consequences can be established with a high degree of certainty; for example, the value of a building that has been damaged by fire.

Other financial consequences may be more difficult to determine, such as the value of business lost while the building damaged by fire is being restored. In addition, although some financial consequences are known as soon as a loss occurs, such as the value of property lost in a robbery, others may take months or years to determine, such as the ultimate value of liability claims regarding a defective product.

Types of Loss Exposures

For insurance and traditional risk management purposes, loss exposures are typically divided into these four types:

- Property loss exposures
- Liability loss exposures
- Personnel loss exposures
- Net income loss exposures



Property loss exposure

A condition that presents the possibility that a person or an organization will sustain a loss resulting from damage (including destruction, taking, or loss of use) to property in which that person or organization has a financial interest.

Tangible property

Property that has a physical form.

Real property (realty)

Tangible property consisting of land, all structures permanently attached to the land, and whatever is growing on the land.

Personal property

All tangible or intangible property that is not real property.

Intangible property

Property that has no physical form.

The three elements of loss exposures apply to each of these four types. However, each type is distinguished in relation to how it affects the first element of a loss exposure, that is, the asset exposed to loss.

Property Loss Exposures

A **property loss exposure** is a condition that presents the possibility that a person or an organization will sustain a loss resulting from damage (including destruction, taking, or loss of use) to property in which that person or organization has a financial interest. Property can be categorized as either tangible property or intangible property.

Tangible property is property that has a physical form, such as a piece of equipment. Tangible property can be further subdivided into **real property** and **personal property**. **Intangible property** is property that has no physical form, such as a patent or copyright. See the exhibit “Elements of Property Loss Exposures.”

Elements of Property Loss Exposures

1. Asset Exposed to Loss

- Tangible property
- Real property, such as offices and warehouses
- Personal property, such as office furniture and office equipment
- Intangible property, such as patents, copyrights, trademarks, trade secrets, and customer goodwill

2. Cause of Loss

Some of the more frequent causes of loss include the following:

- Lightning or hail
- Tornadoes or high wind
- Water from failure of indoor appliances; heavy rain or flooding; or sewers or drains
- Theft
- Snow or ice
- Fire
- Mold

3. Financial Consequences of Loss

The maximum financial consequence of a property loss is limited by the value of the property. However, a property loss may also have an effect on the financial consequences of liability, personnel, or net income losses.

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Damage to property can cause a reduction in that property's value, sometimes to zero. For example, when property is stolen, the owner suffers a total loss of that property because the owner no longer has use of it. In addition to these losses, property damage can result in a loss of income (net income loss exposure) because the property cannot be used to generate income or because extra expenses are incurred to continue operations.

Liability Loss Exposures

A **liability loss exposure** results from the claim itself, not necessarily the payment of damages. See the exhibit "Industry Language—Property and Liability Loss Exposures."

Industry Language—Property and Liability Loss Exposures

Property

A property loss occurs when a person or an organization sustains a loss as the result of damage (including destruction, taking, or loss of use) to property in which that person or organization has a financial interest. The possibility that such a situation could occur is a property loss exposure.

Insurance professionals often use the term "loss" to mean the event itself. In addition, they often refer to the loss in terms of the applicable property, the cause of loss, the consequences, or the applicable policy.

- When focusing on the type of property, they often refer to a "building loss" or a "personal property loss," regardless of the peril involved.
- When focusing on causes of loss, they often refer to a "fire loss," a "smoke loss," or a "theft loss."
- When focusing on consequences, they often refer to a "business income loss," an "extra expense loss," or an "additional living expense loss," regardless of the type of property or causes of loss involved.
- When focusing on the applicable policy, they often use the policy name or type, such as a "homeowners loss," an "auto loss," or a "business interruption loss."

Similar language is used for loss exposures. Insurance practitioners often refer to a building loss exposure, a fire loss exposure, a homeowners loss exposure, or a business interruption loss exposure.

Liability

Insurance and risk management professionals often refer to specific types of liability losses in terms of the applicable coverage or the activity leading to the loss. For example, a claim for damages arising out of a product defect might be referred to as a "products liability loss," and the possibility of such a claim might be referred to as a "products liability loss exposure." Similarly, owning, operating, maintaining, or using an automobile might be referred to as "auto liability" or "auto liability loss exposures."

Liability loss exposure

Any condition or situation that presents the possibility of a claim alleging legal responsibility of a person or business for injury or damage suffered by another party.



Even if a claim is successfully defended, and therefore does not result in payment of damages, the party against whom the claim was made nonetheless incurs defense costs, other claim-related expenses, and potentially adverse publicity, all of which produce a financial loss. See the exhibit “Elements of Liability Loss Exposures.”

Elements of Liability Loss Exposures

1. Asset Exposed to Loss

The asset exposed to loss for a liability loss exposure is money. Payments that may be required include the following:

- Damages to the plaintiff if the claim is not successfully defended
- Settlement costs if the claim settles out of court
- Legal fees
- Court costs

2. Cause of Loss

The cause of a liability loss is the making of a claim or suit against the particular organization by another party seeking damages or some other legal remedy. Even the threat of another party to make such a claim or suit can cause a liability loss in the form of costs the organization incurs to investigate and settle the threatened liability claim or suit.

3. Financial Consequences of Loss

In theory, the financial consequences of a liability loss exposure are limitless. In practice, financial consequences are limited to the total wealth of the person or organization. Although some jurisdictions limit the amounts that can be taken in a claim, liability claims can result in the loss of most or all of a person's or an organization's assets, as well as in a claim on future income.

[DA02386]

Personnel Loss Exposures

Personnel loss exposure

A condition that presents the possibility of loss caused by a person's death, disability, retirement, or resignation that deprives an organization of the person's special skill or knowledge that the organization cannot readily replace.

A **personnel loss exposure** is a condition that presents the possibility of loss caused by a key person's death, disability, retirement, or resignation that deprives an organization of that person's special skill or knowledge that the organization cannot readily replace. A key person can be an individual employee, an owner, an officer or manager of the organization, or a group of employees who possess special skills or knowledge that is valuable to the organization. See the exhibit “Elements of Personnel Loss Exposures.”

For example, the possibility that the CEO of an organization can resign to take a position in a more prestigious organization is a personnel loss exposure. The exhibit reviews the three elements of a personnel loss exposure.



Elements of Personnel Loss Exposures

1. Asset Exposed to Loss

The asset exposed to loss for a personnel loss exposure is the value that the key person adds to the organization.

2. Cause of Loss

Circumstances that can lead to a personnel loss exposure include the following:

- Death
- Disability
- Retirement
- Voluntary separation, such as resignation
- Involuntary separation, such as layoff or firing

3. Financial Consequences of Loss

The financial consequences of a personnel loss vary based on the cause of loss and can be partial or total as well as temporary or permanent. For example, the death of a key employee is a total, permanent loss. If the personnel loss is caused by a disability, the loss of value to the organization may only be a partial loss if the employee is able to continue to add some value to the organization. It may also only be temporary, if a full recovery from the disability is expected.

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If the key person is viewed in terms of his or her family, the loss exposure associated with the loss of that key person is often called a **personal loss exposure** or human loss exposure. Although the terminology is slightly different, the definition is almost the same. For example, a family would face a personal loss exposure with the possibility of the primary wage earner dying.

Net Income Loss Exposures

A **net income loss exposure** is a condition that presents the possibility of loss caused by a reduction in net income. Net income equals revenues minus expenses and income taxes in a given time period. If you consider income taxes to be part of an organization's expenses, a net income loss is a reduction in revenue, an increase in expenses, or a combination of the two. Both individuals and organizations have net income loss exposures. See the exhibit "Elements of Net Income Loss Exposures."

For example, a fire at an organization's production facilities could not only destroy the facilities (a property loss exposure) but also force the organization to stop operations for a few weeks, resulting in a loss of sales revenue (a net income loss exposure). Similarly, if a tornado damages the retail store of a self-employed business owner, the inability to earn income while the store is being

Personal loss exposure

Any condition or situation that presents the possibility of a financial loss to an individual or a family by such causes as death, sickness, injury, or unemployment.

Net income loss exposure

A condition that presents the possibility of loss caused by a reduction in net income.



Elements of Net Income Loss Exposures

1. Asset Exposed to Loss

The asset exposed to loss for a net income loss exposure is the future stream of net income cash flows of the individual or organization.

2. Cause of Loss

Circumstances that can lead to a net income loss exposure include the following:

- Property loss
- Liability loss
- Personnel loss
- Losses stemming from business risks; for example, losses resulting from poor strategic planning

3. Financial Consequences of Loss

The financial consequences of a net income loss vary based on the cause of loss. A reduction in revenues, an increase in expenses, or a combination of the two can have financial consequences. The worst case scenario for a net income loss is a decrease in revenues to zero and a significant increase in expenses for a prolonged period.

[DA02388]

repairs represents a net income loss exposure. The exhibit reviews the three elements of a net income loss exposure.

Net income losses are often the result of a property, liability, or personnel loss (all of which are direct losses). Therefore, net income losses are considered to be indirect losses. A direct loss is a loss that occurs immediately as the result of a particular cause of loss, such as the reduction in the value of a building that has been damaged by fire.

An indirect loss is a loss that results from, but is not directly caused by, a particular cause of loss. For example, the reduction in revenue an organization suffers as a result of fire damage to one of its buildings is an indirect loss. Estimating indirect losses is often challenging because of the difficulty in projecting the effects that a direct loss will have on revenues or expenses. For example, a risk management professional working at a restaurant chain may be able to project the amount needed to settle a lawsuit brought by a customer accusing the restaurant of food poisoning (direct liability loss) with some certainty. However, projecting the effect that any negative publicity relating to the lawsuit would have on future restaurant sales (indirect loss) would be more difficult.

In the insurance industry, the term “net income losses” is usually associated with property losses, and some insurance policies provide coverage for net

Chipotle



income losses related to property losses. However, there are many other causes of net income losses.

Some net income losses are associated with the liability or personnel loss exposures that have traditionally been the focus of risk management. Other net income losses are associated with organizational activities that have not traditionally been the focus of risk management, such as strategic marketing or branding decisions. Besides these, other potential net income losses that may affect individuals or organizations include these:

- **Loss of goodwill**—Organizations are concerned with maintaining goodwill among customers and other stakeholders. Goodwill can be lost in many ways, including providing poor service, offering obsolete products, or mismanaging operations. For a not-for-profit organization, goodwill is equivalent to reputation. Goodwill has broader implications than just reputation in for-profit organizations, because goodwill may have a monetary value. To maintain goodwill, many organizations choose to pay for certain accidents for which they are not legally responsible. For example, if a guest sustains an injury on an organization's premises, and the organization did not cause or contribute to the injury, that organization might still choose to pay any medical bills in order to maintain goodwill and avoid adverse publicity.
- **Failure to perform**—Net income losses may occur as a result of some type of failure to perform, including a product's failure to perform as promised, a contractor's failure to complete a construction project as scheduled, or a debtor's failure to make scheduled payments.
- **Missed opportunities**—An organization may suffer a net income loss as a result of a missed opportunity for profit. For example, an organization that delays a decision to modify its product in response to changes in market demand might lose market share and profit that it could have made on that updated product.

RISK MANAGEMENT BENEFITS

Risk management involves the efforts of individuals or organizations to efficiently and effectively assess, control, and finance risk in order to minimize the adverse effects of losses or missed opportunities. Properly managing risk reduces its negative financial consequences and thereby benefits individuals, organizations, and society.

An organization with an effective risk management program should experience smaller expected losses (less frequent or less severe) and experience less residual uncertainty than a comparable organization that does not practice good risk management. For example, an organization that installs a state-of-the-art security system would expect to have fewer thefts (and therefore lower expected losses) and a better sense of security (less residual uncertainty).



For individuals and families, risk management is usually an informal series of efforts, not a formalized process. Individual or personal risk management may be viewed as part of the financial planning process that encompasses broader matters such as capital accumulation, retirement planning, and estate planning.

In small organizations, risk management is not usually a dedicated function, but one of many tasks carried out by the owner or senior manager. In many larger organizations, the risk management function is conducted as part of a formalized risk management program. A risk management program is a system for planning, organizing, leading, and controlling the resources and activities that an organization needs to protect itself from the adverse effects of accidental losses. See the exhibit “Risk Management Benefits.”

Risk Management Benefits		
	Component	
	Lower Expected Losses	Less Residual Uncertainty
Individuals	Preserves financial resources	Reduces anxiety
Organizations	Preserves financial resources Makes an organization more attractive as an investment opportunity	Reduces deterrence effect
Society	Preserves financial resources	Improves allocation of productive resources

[DA02293]

The exhibit summarizes the benefits of risk management for individuals, organizations, and society in terms of its reduction of expected losses and residual uncertainty. An efficient risk management program helps to minimize the total of all three components of risk's costs.

Reducing the Financial Consequences of Risk

The overall financial consequence of risk for a given asset or activity is the sum of three costs: (1) the cost of the value lost because of actual events that cause a loss, (2) the cost of the resources devoted to risk management for that asset or activity, and (3) the cost of residual uncertainty. However, because it is difficult to assign a specific value to the cost of residual uncertainty, it is also difficult to establish a benchmark against which the performance of the risk management program can be assessed. As a result, organizations typically evaluate a subset of costs that form part of the financial consequences of risk and refer to this subset of costs as the cost of risk.



For a particular asset or activity, the cost of risk can be broken down in this way:

- Cost of losses not reimbursed by insurance or other external sources
- Cost of insurance premiums
- Cost of external sources of funds—for example, the interest payments to lenders or the transaction costs associated with noninsurance indemnity
- Cost of measures to prevent or reduce the size of potential losses
- Cost of implementing and administering risk management

Each year, the Risk and Insurance Management Society (RIMS), a global organization of risk management professionals, conducts a survey to determine the cost of risk for industry categories in the United States and Canada. The survey reveals trends in different industries and is used as a benchmarking tool to compare cost of risks between organizations in the same industry. The survey also provides benchmarking measures in areas such as risk management staffing, insurance coverages, and insurance broker compensation.

By reducing the long-term, overall cost of risk and devoting a minimum of resources to the actual process of managing risk without interfering with normal activities, risk management helps an individual or an organization to be more productive, promotes safety, and enhances profitability.

Benefits to Individuals

Risk management can preserve an individual's financial resources by reducing his or her expected losses. Most individuals have limited financial resources and are therefore not able—or willing—to bear the financial consequences of substantial risks.

For example, most people cannot afford to pay thousands (or millions) of dollars in damages if they seriously injure or kill someone in an auto accident. For some, avoiding loss is a viable alternative, and they choose not to drive. However, for most individuals, driving is a necessity.

Purchasing auto liability insurance enables them to transfer this liability loss exposure to the insurer. Although auto liability insurance is required in most states, many individuals purchase liability coverage well above the minimum required limits.

The second benefit of risk management for individuals is that it reduces the residual uncertainty associated with risk. Most individuals are at least somewhat risk averse. Risk aversion means that, all else being equal, individuals prefer certainty to uncertainty, or less risk to more risk.

For example, if given a choice between the 100 percent certainty of paying \$100 or a 20 percent chance of paying \$500 (and, therefore, an 80 percent chance of paying nothing), a risk-averse individual would choose the 100 percent certainty of paying \$100. Risk management allows an individual to



invest time and money into managing risks in order to reduce uncertainty and its associated anxiety.

Benefits to Organizations

Organizations tend to have more resources than individuals and therefore are better equipped to bear risk. Consequently, organizations do not exhibit the same degree of risk aversion as individuals. Nonetheless, organizations usually choose to manage their risks, because they, too, benefit from preserving their financial resources.

Preservation of financial resources adds value to the organization and makes it a safer and more attractive investment, because shareholders or other investors want to know that their equity is safe and will generate future income and creditors seek assurance that the money they have loaned the organization will be repaid on time with interest. Risk management can protect the financial resources necessary to satisfy these parties and other stakeholders.

The protection that risk management affords an organization's financial resources can, in turn, provide confidence that capital is protected against future costs such as property loss, interruption of future income, liability judgments, or loss of key personnel. This sense of confidence is attractive both to suppliers and customers. As a result, suppliers may be more willing to allow the organization to buy on credit, and customers may purchase more products or services the organization offers.

Risk management also can reduce the deterrence effect of risk; that is, it can improve an organization's capacity to engage in business activities by minimizing the adverse effects of risk. Consequently, the organization can plan for its future with less uncertainty about potential outcomes. The fear of possible future losses tends to make senior management reluctant to undertake activities or investments it considers too risky, thereby depriving the organization of their associated benefits.

By making losses less frequent, less severe, or more predictable, risk management can alleviate management's fears about potential losses. This increases the feasibility of activities such as research and development, joint ventures, or investment in other organizations, which previously appeared too risky.

Benefits to Society

Society also faces a cost of risk, as well as uncertainty about future losses. Its cost of risk is slightly different from that of an individual or organization. Nonetheless, risk management benefits society in the same ways that it does individuals and organizations, by lowering expected losses and reducing residual uncertainty.

A nation's economy has limited resources with which to produce goods and services. When, for example, a fire or an earthquake demolishes a factory or



destroys a highway, that economy's overall productive resources are reduced. Beyond the resources directly consumed in a loss, a significant portion of a nation's productive resources is devoted to preventing, repairing, or compensating for the results of losses.

When losses are possible, some portion of the economy's resources must be devoted to risk management for the benefit of society as a whole. Minimizing the resources consumed in running an economy's risk management program is analogous to an organization minimizing the administrative costs of its risk management department.

By reducing residual uncertainty, risk management also improves the allocation of productive resources. Risk management makes those who own or run an organization more willing to undertake risky activities, because they are better protected against losses that those activities might have produced. This makes executives, workers, and suppliers of financial capital more able to pursue activities that maximize profits; returns on investments; and, ultimately, wages. Such shifts increase productivity within an economy and improve the overall standard of living.

RISK MANAGEMENT PROGRAM GOALS

Senior management support is essential to an effective and efficient risk management program. To gain that support, a risk management program should promote the organization's overall goals. With a clear understanding of the organization's overall goals, a risk management program's goals can be tailored to support the organization's goals.

Risk management program goals are typically divided into two categories: pre-loss goals and post-loss goals. Possible **pre-loss goals** include economy of operations, tolerable uncertainty, legality, and social responsibility. **Post-loss goals** broadly describe the degree of recovery that an organization will strive to reach following a loss. Possible post-loss goals include survival, continuity of operations, profitability, earnings stability, social responsibility, and growth.

Pre-Loss Goals

Regardless of loss experience, every organization has operational goals that are vital to its success that the risk management program should support. Four such operational goals include these:

- Economy of operations
- Tolerable uncertainty
- Legality
- Social responsibility

Pre-loss goals

Goals to be accomplished before a loss, involving social responsibility, externally imposed goals, reduction of anxiety, and economy.

Post-loss goals

Risk management program goals that should be in place in the event of a significant loss.



Although these are not the only possible operational goals, they are typical of the types of operational goals that pre-loss risk management activities are designed to support.

Economy of Operations

A risk management program should operate economically and efficiently; that is, the organization generally should not incur substantial costs in exchange for slight benefits. One way to measure the economy of a risk management program is through benchmarking, in which an organization's risk management costs are compared with those of similar organizations. One such study, conducted annually, is the *Risk and Insurance Management Society (RIMS) Benchmark Survey*.

Tolerable Uncertainty

Tolerable uncertainty involves keeping managers' uncertainty about losses at tolerable levels. Managers should be able to make and implement decisions effectively without being unduly affected by uncertainty. Therefore, risk management professionals typically seek to implement a risk management program that assures managers that whatever might happen will be within the bounds of what was anticipated and will be effectively treated by the risk management program.

Although a risk management program should make all personnel aware of potential loss exposures, the program should also provide assurances through both risk control and risk financing that loss exposures are being managed well.

Legality

The risk management program should help to ensure that the organization's legal obligations are satisfied. These legal obligations will typically be based on:

- Standard of care that is owed to others
- Contracts entered into by the organization
- Federal, state, and local laws and regulations

A risk management professional has an essential role in helping the organization avoid liability by meeting the standard of care that it owes to others. The risk management professional and the organization's legal counsel manage lawsuits brought by others that arise from the organization's wrongful or negligent acts or omissions.

Some public and charitable entities are immune from negligence claims because of long-standing constitutional and other judicial doctrines that exempt them. However, such immunities have eroded over time, and many entities that might be eligible for such immunity choose to purchase liability insurance rather than invoke it.



The risk management professional should be aware of the organization's contractual obligations as well as the contractual obligations that others owe to it. If the organization does not fulfill its obligations under a contract, the other party may bring a lawsuit against the organization for breach of contract. If the other party does not fulfill its obligation and the organization does not pursue the matter, the other party may be relieved of its obligations under the contract.

Risk management professionals also need to be aware of the federal, state, and local laws and regulations that apply to their organizations and should work with other employees to ensure compliance. Examples of laws and regulations of particular concern to the risk management function are occupational health and safety regulations, labeling requirements for consumer products, regulations about hazardous waste disposal, and statutes establishing mandatory insurance requirements.

Social Responsibility

Social responsibility, which is both a pre-loss and a post-loss goal for many organizations, includes acting ethically and fulfilling obligations to the community and society as a whole. Beyond the altruistic interests of the organization's owners, many organizations justify pursuing this goal because of its potential to enhance the organization's reputation.

For public entities and not-for-profit organizations, social responsibility might be the overriding pre-loss goal, even surpassing the need for economy of operations. Public entities exist to fulfill the needs of their constituents, so their purpose is to promote social goals. Similarly, not-for-profit organizations are chartered to meet the needs of members, subscribers, or students, and this often requires a social responsibility focus.

Post-Loss Goals

Post-loss goals are based on the operating and financial conditions that the organization's senior management would consider acceptable after a significant foreseeable loss. These are six possible post-loss goals:

- Survival
- Continuity of operations
- Profitability
- Earnings stability
- Social responsibility
- Growth

After a severe loss, the most basic goal is survival, while the most ambitious goal is uninterrupted growth. The more ambitious a particular post-loss goal, the more difficult and costly it is to achieve.



Survival

Survival is a fundamental post-loss goal. For individuals, survival means staying alive. For organizations, survival means resuming operations to some extent after an adverse event. Survival does not necessarily mean returning to the condition that existed before loss. Within that context, an organization survives a loss whenever that loss does not permanently halt its production and the incomes of those who work for or own it.

Examples of losses that could prevent an organization's survival include these:

- Its only office or plant is destroyed.
- A legal liability judgment or an out-of-court settlement drains its cash and credit resources.
- The death or disability of a key employee (such as an executive or a technician) deprives it of essential leadership or of some vital expertise.

Continuity of Operations

Continuity of operations is an important post-loss goal for many private organizations and an essential goal for all public entities. Although the survival goal requires that no loss (no matter how severe) permanently shut down an organization, the goal of continuity of operations is more demanding. With continuity as a goal, no loss can be allowed to interrupt the organization's operations for any appreciable time.

Within the context of continuity, "appreciable" is a relative term and depends on the goods or services produced. One organization may be unable to tolerate even a few days' shutdown, whereas another organization's output might be continuous even when some of its activities halt for a month or more.

When an organization's senior management sets continuity of operations as a goal, its risk management professional must have a clear, detailed understanding of the specific operations whose continuity is essential and the maximum tolerable interruption interval for each operation.

Any organization for which continuous operation is essential must take steps, and probably incur additional expenses, to forestall an intolerable shutdown. Such steps include these:

- Identify activities whose interruptions cannot be tolerated
- Identify the types of events that could interrupt such activities
- Determine the standby resources that must be immediately available to counter the effects of those losses
- Ensure the availability of the standby resources at even the most unlikely and difficult times

The last step, ensuring the availability of standby resources, is likely to add to an organization's expenses, and, accordingly, achieving the continuity of operations goal tends to be more costly than the more basic goal of survival.



However, for organizations that give high priority to continuity of operations, this added cost is preferable to the alternative of business interruption.

For public entities—particularly cities, counties, and other governing bodies, as well as schools and public utilities—maintaining public services without interruption is perhaps the most important risk management goal. Any sustained interruption in police or fire protection, supplies of clean water, removal of trash or sewage, or public education can be catastrophic. The essential purpose of most public entities is to provide some service, and therefore they are willing to commit significant resources to comprehensive contingency plans.

Profitability

As well as considering the physical effects a loss might have on an organization's operations, senior management may also be concerned with how such a loss would affect the organization's profitability. In a for-profit organization, the goal is to generate net income (profit). In a not-for-profit organization, the goal is to operate within the budget. An organization's senior management might have established a minimum amount of profit (or surplus in not-for-profit organizations) that no loss can be allowed to reduce.

To achieve the specified minimum amount of profit, the risk management program is likely to emphasize insurance and other means of transferring the financial consequences of loss so that actual financial results fall within an acceptable range. An organization that requires a minimum profit tends to spend more on risk management, particularly risk financing, than does an organization that is prepared to tolerate an occasional unprofitable financial result.

Earnings Stability

Rather than strive for the highest possible level of profit (or surplus) in a given period, some organizations emphasize earnings stability over time.

Striving for earnings stability requires precision in forecasting risk management costs, as well as lower retention levels and a willingness on the part of the organization to spend more on risk transfer mechanisms. A risk management professional focusing on earnings stability would seek ways of creating consistent results over time rather than choose actions that might produce fluctuating results.

Social Responsibility

Losses affect an organization's ability to fulfill its real or perceived obligations to the community and to society as a whole. Organizational disruptions have implications for relationships with customers, suppliers, employees, taxpayers, and other members of the public. These relationships, even though they may not involve legal obligations, are often the focus of the organization's overall mission.



Many not-for-profit organizations and public entities are unable to distinguish between the post-loss goals of survival and social responsibility because of their focus on community service. However, the post-loss goal of social responsibility does not apply only to not-for-profit and public entities.

For example, consider an organization with strong ties to the local community that relies heavily on the support of the customers and suppliers in its neighborhood. If such an organization makes a social commitment, such as sponsoring a local charity event, then the failure to honor that commitment could seriously damage its reputation and correspondingly affect its future business operations. Such an organization would want to ensure that its risk management program provided sufficient protection against losses so that the organization's ability to meet its social responsibilities would not be seriously diminished in the event of a loss.

Growth

Emphasizing the post-loss goal of growth—for example, increasing market share, the size and scope of activities or products, or assets—might have two distinctly opposing effects on an organization's risk management program. Those effects depend on the managers' and owners' tolerance for uncertainty.

If striving to expand makes managers and owners more willing to accept greater uncertainty in exchange for minimizing risk management costs, the organization's explicit costs for risk management could be fairly low. Such an organization's risk management professional might find it difficult to obtain a budget adequate to protect against expanding loss exposures. Moreover, if such an organization suffers a severe loss for which it was not adequately prepared, its real cost of risk management—more accurately, its real cost of not effectively managing loss exposures—might be significant and involve sacrificing much of the growth it has attained.

In contrast, the goal of risk management in a growing organization might be to protect its expanding resources so that its path of expansion is not blocked or reversed by a substantial loss. Risk management costs in this scenario are likely to be high because such an organization might seek increased earnings (growth) rather than survival or earnings stability. Consequently, the organization lowers its tolerance for unanticipated loss and requires greater emphasis on risk control and risk financing.

Conflict Between Goals

Pre-loss and post-loss goals are interrelated and sometimes conflict with each other. Although conflicts may arise between post-loss goals, it is more common for post-loss goals to conflict with pre-loss goals, or for pre-loss goals to compete with each other. Therefore, an organization might discover that fully achieving all risk management program goals simultaneously is impossible.



Achieving any post-loss goal involves expending risk management resources, which may conflict with the pre-loss goal of economy of operations. The more ambitious and costly the post-loss goal, the greater the conflict with the economy of operations goal. The economy of operations goal may also conflict with the tolerable uncertainty goal.

To provide management with the desired level of assurance, the risk management professional must be confident that certain organizational post-loss goals will be achieved. Gaining that confidence requires allocating some of the organization's limited resources, including money, to risk management efforts such as purchasing insurance, installing guards on machinery to prevent industrial accidents, or maintaining duplicate copies of records in case originals are destroyed.

The legality and social responsibility goals may also conflict with the economy of operations goal. Some externally imposed obligations, such as safety standards dictated by building codes, may be nonnegotiable. Therefore, the costs imposed by legal obligations must be accepted as unavoidable, regardless of the economy of operations goal.

Obligations imposed by social responsibility, such as employee benefits subject to collective bargaining agreements, may be negotiable. However, although meeting social responsibility might raise costs in the short term, it can have worthwhile long-term benefits that make the costs acceptable.

THE RISK MANAGEMENT PROCESS

To fulfill the goals of a risk management program, insurance and risk management professionals use the risk management process, a series of six steps that can be applied to any set of loss exposures.

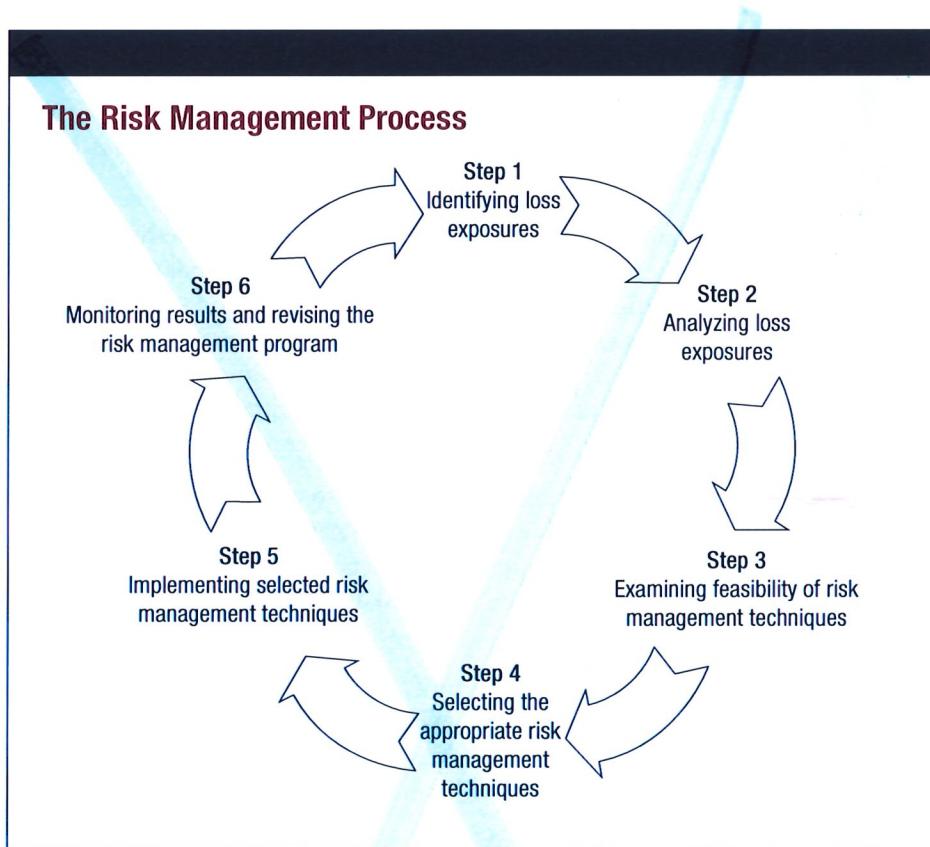
Application of this process can be initiated by events such as an insurance renewal, a serious claim, a merger or an acquisition, or a new law or regulation that affects the organization. However, the risk management process need not be initiated by events such as these, because it is continuous. The last step in the process, monitoring results and revising the existing risk management program, may lead to the identification of new or additional loss exposures. See the exhibit "The Risk Management Process."

Step 1: Identifying Loss Exposures

A wide variety of methods, such as those listed in the "Identifying Loss Exposures" exhibit, can be used to identify the specific loss exposures that could interfere with the achievement of the organization's goals. These methods offer a systematic approach to identifying loss exposures. They also can enable risk management professionals to identify missed opportunities.

Although loss exposure identification methods are applied individually, they can overlap in their use and function. Despite this overlap, using different





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methods helps the risk management professional avoid overlooking important loss exposures. For example, loss history documents may not reveal the possibility of loss exposures related to flood, but studying a flood insurance rate map or a cause of loss checklist would. See the exhibit “Identifying Loss Exposures.”

Step 2: Analyzing Loss Exposures

Analyzing loss exposures is completed by estimating the likely significance of possible losses identified in step one. Together, these two steps constitute the process of assessing loss exposures and are therefore probably the most important steps in the risk management process, because only a properly assessed loss exposure can be appropriately managed. Once a loss exposure has been assessed, the best ways to manage it often become immediately apparent. The remaining steps of the risk management process flow from this assessment.

Loss exposures are analyzed along these four dimensions:

- Loss frequency—the number of losses (such as fires, auto accidents, or liability claims) within a specific time period
- Loss severity—the amount, in dollars, of a loss for a specific occurrence



Identifying Loss Exposures

No single method exists for identifying loss exposures. Risk management professionals may use some or all of the following:

- Document analysis (including any or all of the following):
 - Risk assessment questionnaires and checklists
 - Financial statements and underlying accounting records
 - Contracts
 - Insurance policies
 - Organizational policies and procedures
 - Flowcharts and organizational charts
 - Loss histories
- Compliance reviews
- Inspections
- Expertise within and beyond the organization

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- Total dollar losses—the total dollar amount of losses for all occurrences during a specific time period
- Timing—when losses occur and when loss payments are made

Reviewing these dimensions enables a risk management professional to develop loss projections and prioritize loss exposures so that resources can be properly allocated. Analyzing loss exposures is, in itself, expensive. The cost of risk includes the cost of acquiring risk-related information used in loss forecasts, estimates of future cash flows, and other planning activities. In some cases, this information can actually reduce losses.

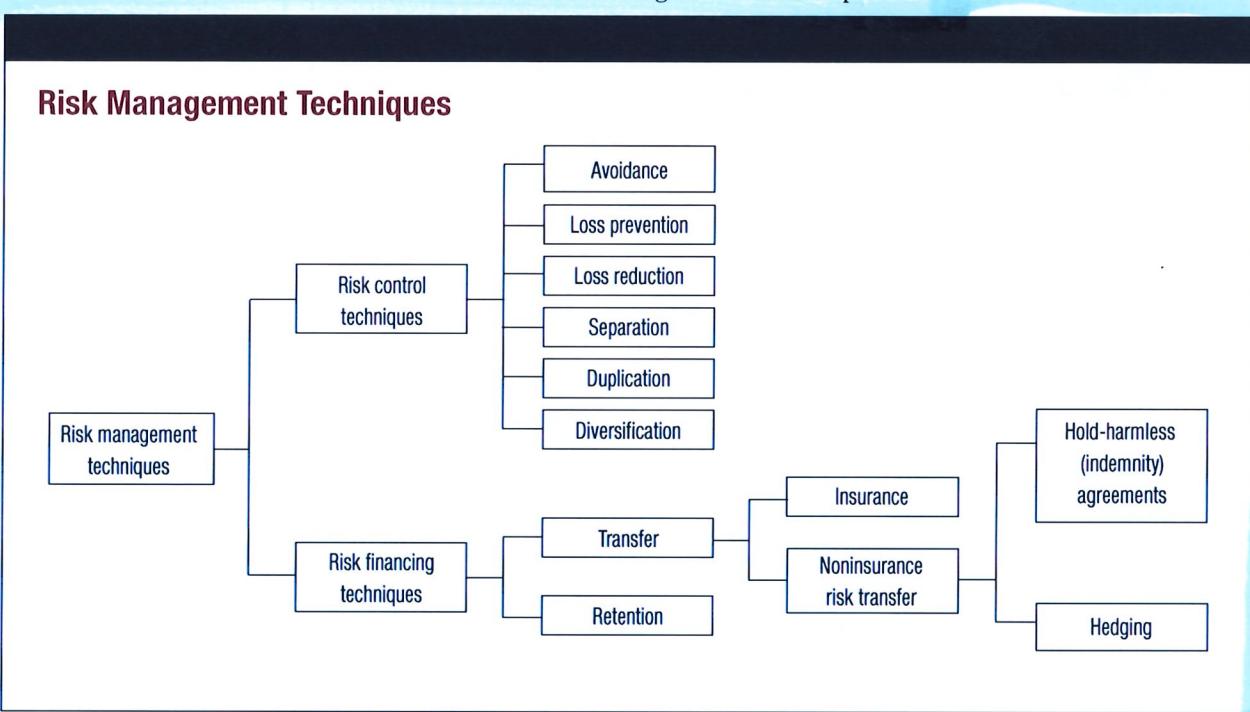
For example, recent advances in satellite technology and meteorology provide advance warning that enables people in a hurricane's path to board up windows, evacuate, and implement other loss reduction measures. Such detailed information improves forecast accuracy and can lead to better risk management decisions.

Step 3: Examining the Feasibility of Risk Management Techniques

Loss exposures arise from activities and circumstances that are essential to individuals and to organizations. These loss exposures can be addressed through the risk control techniques and risk financing techniques shown in the "Risk Management Techniques" exhibit. Broadly speaking, risk control



techniques are those risk management techniques that minimize the frequency or severity of losses or make losses more predictable. Risk financing techniques are those risk management techniques that generate funds to finance losses that risk control techniques cannot entirely prevent or reduce. See the exhibit “Risk Management Techniques.”



[DA02598]

Risk management techniques are not usually used in isolation. Unless the loss exposure is avoided, organizations typically apply at least one risk control technique and one risk financing technique to each of their significant loss exposures. The risk control technique alters the estimated frequency and severity of loss, and the financing technique pays for losses that occur despite the controls. Most risk control and risk financing techniques can be used with any other control or financing technique.

Step 4: Selecting the Appropriate Risk Management Techniques

Once loss exposures have been identified and analyzed and possible risk management techniques considered, risk management professionals can select those techniques that best prevent or reduce losses and that will adequately finance losses that occur despite prevention and reduction efforts. Selecting the most appropriate mix of risk management techniques is usually based on quantitative financial considerations as well as qualitative, nonfinancial considerations. See the exhibit “Summary of Risk Control and Risk Financing Techniques.”



Summary of Risk Control and Risk Financing Techniques

Risk Control Techniques

Avoidance eliminates any possibility of loss. The probability of loss from an avoided loss exposure is zero because an entity decides not to assume a loss exposure in the first place (proactive avoidance) or to eliminate one that already exists (abandonment).

Loss prevention involves reducing the frequency of a particular loss.

Loss reduction involves reducing the severity of a particular loss.

Separation involves dispersing a particular activity or asset over several locations.

Separation involves the routine, daily reliance on each of the separated assets or activities, all of which regularly form a portion of the organization's working resources.

Duplication involves relying on backups, that is, spares or duplicates, used only if primary assets or activities suffer loss.

Diversification involves providing a range of products and services used by a variety of customers.

Risk Financing Techniques

Retention involves generating funds from within the organization to pay for losses.

Transfer involves generating funds from outside the organization to pay for losses and includes insurance and noninsurance transfer.

[DA02599]

Financial Considerations

Most private, for-profit organizations choose risk management techniques by using financial criteria—that is, they choose those techniques with the greatest positive (or least negative) effect on the organization's value. The risk management techniques selected should be effective and economical. A technique is effective if it enables an organization to achieve its desired goals, such as to maximize organizational value. A technique is economical if it is the least expensive of the possible effective options.

For all organizations, the potential costs if loss exposures are left completely untreated must be compared with the costs of possible risk management techniques when considering whether a technique is economical. A financial analysis of a risk management technique may be based on three different forecasts.

Based on those considerations, an organization can perform a cost/benefit analysis that identifies the risk management technique, or combination of techniques, that will maximize the organization's value while allowing it to stay within budgetary constraints.



The three forecasts a financial analysis of a risk management technique may be based on are these:

- A forecast of the dimensions of expected losses (frequency, severity, timing of payment, and total dollar losses).
- A forecast, for each feasible combination of risk management techniques, of the effect on the frequency, severity, and timing of these expected losses.
- A forecast of the after-tax costs involved in applying the various risk management techniques. These costs include, for example, the cost of insurance premiums or the expenses associated with installing and maintaining various risk control devices.

Nonfinancial Considerations

Although an organization's goal should be to determine a level of risk management that will maximize its financial value, an organization's value may also stem from ethical and other nonfinancial considerations. Data based on objective risk factors usually are not the only criteria considered in determining appropriate risk management techniques. An organization might also place a great deal of value on maintaining operations or on peace of mind.

An organization's nonfinancial goals can constrain its financial goals, leading to the selection of risk management techniques that, although best for that organization, might be inconsistent with its value maximization goal. For example, a private, family-owned organization might emphasize stability of earnings over time, rather than maximum earnings in any one period. Consequently, the organization might over-invest in loss prevention devices or safety practices rather than absorb the minor losses that these devices or practices are designed to prevent. For similar reasons, a private, family-owned organization would be likely to insure against losses that, from a value maximization standpoint, might be better to retain.

Step 5: Implementing the Selected Risk Management Techniques

After an organization decides which risk management technique(s) to use, the next step is to implement them, which requires cooperation among its departments. Implementing risk management techniques may involve any of these measures:

- Purchasing loss reduction devices
- Contracting for loss prevention services
- Funding retention programs
- Implementing and continually reinforcing loss control programs



- Selecting agents or brokers, insurers, third-party administrators, and other providers for insurance programs
- Requesting insurance policies and paying premiums

Implementing risk management techniques does not necessarily end with the initial implementation of the selected technique. For example, if an organization purchases a building, it almost certainly will also decide to purchase property insurance. However, additional details, such as the exact placement of fire extinguishers, the terms and cost of insurance and noninsurance contract revisions, which insurer to use, the timing of insurance premium payments, or the actual deposit of funds for a retention program or to cover deductibles, must be addressed as the program is implemented.

Step 6: Monitoring Results and Revising the Risk Management Program

Once implemented, a risk management program must be monitored and periodically revised as necessary in order to ensure that it is achieving expected results and to adjust it to accommodate changes in loss exposures and the availability or cost-effectiveness of alternative risk management techniques. Monitoring and revising the risk management program requires four steps: (1) establishing standards of acceptable performance, (2) comparing actual results with these standards, (3) correcting substandard performance or revising standards that prove to be unrealistic, and (4) evaluating standards that have been substantially exceeded.

Establishing Standards of Acceptable Performance

Because of year-to-year variations and the random nature of fortuitous events, the best way to monitor a risk management program may be to combine standards that consider both results and activities. A results standard focuses on actual achievement of goals, regardless of the effort required to achieve them.

For example, a risk management professional might judge a risk management program's performance in terms of a decline in the frequency or severity of employee injuries. However, those results depend largely on fortuitous events, which, by definition, are unpredictable. In contrast, an activity standard focuses on efforts made to achieve a goal regardless of actual results. These independent standards focus mainly on the quality and quantity of the risk management department's activities, such as the installation of new safety equipment designed to protect employees from injury, rather than the actual outcomes.

Risk management professionals often contend that their contribution is as great in years in which there are many losses as in years in which there are few losses, because the losses themselves are beyond their control. In fact, risk management professionals may be even more valuable to their organizations when losses are severe because of the assistance that they can give to



the organization in dealing with those losses. Therefore, risk management professionals have sought performance standards that are not solely dependent on the organization's somewhat uncontrollable loss record. Although results standards are important, activities standards are necessary to obtain a complete picture of the success or failure of a risk management program.

Comparing Actual Results With Standards

A proper standard for evaluating risk management performance includes specifications for how results or performance will be measured. A good standard includes target activity levels or results, or at least desired directions of change.

For example, if an organization had a risk management goal of preventing accidents involving its employees, a results standard could be formulated as a maximum number of accidents per employee hour worked, or at least as a decrease in the number of accidents from one year to the next. A comparison of the actual number of accidents that occur with the number established in the results standard will indicate whether risk management activities are achieving the desired results.

Alternatively, an activity standard relating to the same employee accidents could specify, and provide a schedule for, when an organization's employees should receive safety training updates. The comparison of results against this activity standard would not consider the number of employee accidents, but instead determine whether all employees received the level of training established by the standard.

Correcting Substandard Performance

The risk management professional should also develop a plan for addressing substandard performance. For example, if the number of safety inspections is below that required by the standard, the risk management professional should include a plan to increase their frequency. If retained losses are growing faster than expected, then the risk management professional should determine how retention levels and, perhaps, risk control techniques should be reevaluated.

Substandard performance does not necessarily indicate that the performance itself is the problem. The standard may, in fact, be inappropriate. A risk management program should change when loss exposures change.

Similarly, the standards by which that program is evaluated must be reexamined and possibly altered if the environment within which the risk management program operates also changes. For example, increases in inflation, changes in the volume or nature of an organization's activities, and cyclical or long-term movements in insurance markets or money markets may require adjustments in standards by which acceptable risk management performance is evaluated.



Although changes in risk management standards should not be arbitrary, the continuing need for change should be recognized. Therefore, when monitoring a risk management program, the standards for evaluating that program should also be evaluated, and, when appropriate, revised to accommodate new situations.

Evaluating Standards That Have Been Substantially Exceeded

Performance should ideally meet or exceed a standard. However, if performance substantially exceeds a standard, then the risk management professional should determine why. One reason may be the superior skills of the employee or employees involved in implementing the standard. Another alternative is that the standard is not sufficiently demanding. The risk management professional should, if appropriate, revise the standard so that it more accurately reflects the performance potential of the employees and the organization.

Although monitoring results and revising the risk management program is listed as the final step of the risk management process, it is often the first step for a risk management professional who is taking control of an organization's risk management program. Unless the organization is a start-up, it probably has some (either formal or informal) risk management program in place. Once the risk management program has been properly evaluated, the risk management professional begins the risk management process again. The steps of the risk management process are applied under the revised risk management program, which may now have different program goals or face a new set of organizational risks.

SUMMARY

The word risk can have many different meanings. In this section, risk is defined as the uncertainty about outcomes, some of which can be negative. The two elements within this definition of risk are uncertainty of outcome (uncertainty about what will actually occur, when the outcome will occur, or a combination of the two) and the possibility of a negative outcome.

Possibility means that an outcome or event may or may not occur. This is not the same as probability, which is the likelihood that an outcome or event will occur. Unlike possibility, probability is measurable and has a value between zero and one.

Classifying the various types of risk can help organizations manage risk. Some of the most commonly used classifications are pure and speculative risk, subjective and objective risk, and diversifiable and nondiversifiable risk. An organization's risks can also be categorized into quadrants as hazard risk, operational risk, financial risk, and strategic risk.



When managing risk, it is useful to consider the financial consequences of risk. The financial consequences of risk faced by individuals or organizations can be broken into three components: (1) expected cost of losses or gains, (2) expenditures on risk management, and (3) the cost of residual uncertainty.

Risk management can differ markedly for individuals, small organizations, and large organizations. At whatever level it is practiced, risk management is aimed at dealing economically with risk, whether through an individual's informal efforts or through an organization's formalized risk management program. Traditionally, risk management has been concerned almost exclusively with pure risk. A new approach, called enterprise-wide risk management, is concerned with all risks, pure and speculative, that an organization faces.

Individuals and organizations incur losses when assets they own decrease in value. Situations or conditions that expose assets to loss are called loss exposures. The elements of any loss exposure are an asset exposed to loss, the cause of loss (or peril), and the financial consequences of the loss. Property loss exposures, liability loss exposures, personnel loss exposures, and net income loss exposures each contain the three elements.

For an individual, the specific benefits of risk management are preservation of financial resources and reduction of anxiety. For an organization, the benefits are preservation of financial resources, increased attractiveness to investors, and reduction of the deterrence effect of risk. For society as a whole, the benefits are preservation of financial resources and an improved allocation of productive resources.

Risk management program goals are typically divided into two categories: pre-loss goals and post-loss goals. Pre-loss goals include economy of operations, tolerable uncertainty, legality, and social responsibility. Post-loss goals include survival, continuity of operations, profitability, earnings stability, social responsibility, and growth.

The risk management process consists of six steps that can be applied to any set of loss exposures:

1. Identifying loss exposures
2. Analyzing loss exposures
3. Examining the feasibility of risk management techniques
4. Selecting the appropriate risk management techniques
5. Implementing the selected risk management techniques
6. Monitoring results and revising the risk management program

ASSIGNMENT NOTE

1. Herbert W. Heinrich, *Industrial Accident Prevention*, 4th ed. (New York: McGraw-Hill Book Co., 1959), pp. 51–52. In 1980, a fifth edition of *Industrial Accident Prevention* was published, containing revisions by Dan Peterson and Nester Roos.

