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Managing business risk; Management series

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MANAGEMENT SERIES

Managing Business Risk

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NOTICE TO READERS

MANAGEMENT SERIES

Managing Business Risk

Edited by Christopher R. Malburg, CPA

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Foreword

This booklet is one of a series on management concepts and skills issued by the Management of an Accounting Practice Committee of the American Institute of Certified Public Accountants. Written for CPA firms' clients, these booklets are easy to read and have a practical emphasis throughout. They provide today's managers with a short course in management techniques that are used to operate successful businesses.

For further reference, a list of relevant books and articles is included in appendix C.

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Chapter 1

Risk Identification

Since risk is a factor in any business, a firm that fails to manage it will, in time, fail. Small businesses are especially vulnerable to bad risk management decisions, since they lack the resources to weather a crisis. Their margin of error is much smaller than that of larger firms, and small businesses are the least likely to have procedures that identify risks and formulate contingency plans.

The aim of risk management is not to avoid risk entirely. Rather, the process involves minimizing and, occasionally, transferring risk away from the company. Risk management procedures often put the chances of loss into an acceptable range where the deal can be done. For example, the sale of a large order to a foreign customer involves the risk of exposure to foreign currency fluctuations. If the customer's foreign currency moves the wrong way, all profits could be wiped out. The risk management solution: Buy a foreign currency futures contract to hedge the transaction and lock in the profit.

For most types of risk there is usually some way either to lessen the risk or to transfer some of it to another party.

Sources of business risk exist within a company (such as its employees and organization), outside a company (such as the general business environment), or as a combination of the two (products, for example, involve factors of quality which is internal, and changing markets which is external).

Internal risk is generally the easiest to control. Certainly, management will be more effective in controlling this type of risk than in handling, say, the risk of adverse legislation. All areas of a business are vulnerable to risk. Identifying sources of risk enables the business to minimize its potential impact.

To achieve successful risk management, businesses focus on the following risk components.

ORGANIZATION

Information Systems

Disruption of the information systems that monitor and control production, as well as the finances of a company, can affect profitability. Risk of computer failure in an information-dependent company can be serious. Companies that fail to provide adequate contingency plans in the event of computer failure needlessly take on risk.

Access to Funding

Anything that damages the confidence of investors or lenders threatens the business. This becomes increasingly important as the business grows and requires larger sources of external financing. Maintaining an acceptable return to shareholders and sustaining the creditworthiness of the organization are areas in which management *must* control the risk.

Work Environment

Companies have the responsibility to provide safe working conditions for their employees.

However, this responsibility may be overlooked, and the following conditions may exist:

- Poorly trained and unmotivated line supervisors responsible for the most dangerous areas of the firm
- Management's emphasis on production at the expense of safety
- Lack of sufficient training for workers

These circumstances may combine to turn an otherwise low-risk organization into one that invites lawsuits.

Dangerous work environments are not limited to manufacturing companies. Offices can present a work environment risk if they are poorly lit, if computer screens are proven to emit high levels of radiation, or if computer keyboards are proven to cause carpal tunnel syndrome. Entire buildings have been condemned as being toxic from such sources as asbestos and radon. Not so severe is the risk of distractions (such as noise or lack of air conditioning), which can cause worker productivity to suffer.

Key Employees

Within the organization, the key employees are susceptible to the following kinds of risk:

- Inadequate information
- Bad planning
- Ineffective management controls
- Lack of management succession and backup

Each of these risks can be caused by (or contribute to) the others. For example, bad planning may cause the company to run short of key raw materials, and it probably comes about as the result of weak management controls. For companies that underestimate their need for cash resources, this error often proves fatal.

The risk of lack of succession and backup pertains especially to key employees. Companies with an inadequate depth in the management team (that is, they cannot continue without certain key individuals) run a business risk if the key people leave. Such companies are essentially at the mercy of a powerful few.

A Chain of Problems

Organizational weakness produces a chain of potential problems that may eventually lead to disaster. For instance, a lack of adequate communication within the organization about production costs may cause a manager to bid incorrectly on an entire series of jobs. The unprofitable contracts draw essential working capital from the company as it struggles to fulfill its obligations. Soon cash flow falls below minimums and borrowing becomes necessary. However, lenders are reluctant to advance money to a company in such dire straights. The firm inevitably collapses.

PRODUCT OR SERVICE

A company bears the greatest risks from the products it makes. Product risk involves not only liability (resulting from poor workmanship or materials that might cause a user to be injured), but also the marketing group and sales force, which may not be effective in demonstrating the need for the product or in generating sufficient sales.

The Raytheon Corporation was concerned with management of product risk when their Patriot missiles were used in the Persian Gulf War. These high-tech marvels ran huge risks in terms of the actual missile, its launcher, radar, software, and the operators. Further, the missiles were deployed in a hostile environment. Almost more than any other item used in the Persian Gulf War, the Patriot missile was in the spotlight. When the weapon was proven to work, orders began flooding into Raytheon's manufacturing plant. The company took on additional risks to fill these new orders. Among them were potential negative manufacturing cost variances and purchase price variances due to a stepped-up production schedule.

Management of product risk is of particular concern to companies that rely on exclusive rights. These companies usually identify the risk of patent infringement or industrial espionage as a priority. High-technology, software, and pharmaceuticals are three categories of companies that carefully guard their information.

Competition

The potential for the competition to steal a company's previously loyal customers often exists. Companies manage the risk of competitive intervention by anticipating the actions that would gain competitors an advantage (for example, when a competing company promotes a loss leader to gain market share).

Customers

Over-reliance on a narrow spread of customers creates risk. If your market is narrow, your customers are more likely to hear of problems in your company and discontinue their relationship (practicing their own form of risk management). Selling huge orders to just a few customers also increases the impact of a single bad debt on your entire receivables portfolio.

On the other hand, a broad and diverse customer base increases the probability of a long-term demand for your products and services. Companies that sell to many customers can still survive with a few bad debts or a few disgruntled customers.

Market

Market changes can have a major impact on product demand. Although reading a market correctly is difficult, it is also crucial, since few products recover from mistakes made when they are launched. Often, these errors could have been corrected with market research or prototype testing. A famous case of marketing error was when the new-formula for the Coke soft drink was introduced at the same time the removal of the old-formula Coke was announced. It took years before lost market share was recovered.

Another marketing risk is narrow focus. Reliance on one or just a few markets exposes the business to the risk of shifting demands or changes in economic climate. Larger market exposure, however, provides the ability to weather downturns in a few segments.

Maintaining market share requires investment of time and money:

- Management *time* to assess shifts in demand, then meeting them
- *Money* to keep your name before customers so they continue buying your products

Quality

Inferior product quality puts the business at risk. Aircraft manufacturers with faulty products quickly gain public attention. Further, the regulatory authorities may ground the aircraft. Not only does the manufacturer suffer, but so do the airlines who purchased the aircraft.

Problems in product quality also create the potential for liability suits and cause the company's reputation to suffer, thereby affecting future sales.

Innovation

Innovation by competitors is a major source of risk. Failure to incorporate innovative ideas or manufacturing processes can render a product noncompetitive, overpriced, and sometimes obsolete. Further, threats from the competition may arise not only from technological innovation but from virtually any edge the competitor dreams up (such as delivery schedules, packaging, customer service, and guarantee terms).

Businesses intent on maintaining or improving their market positions anticipate competitive threats and are often the first to innovate. Anticipation of these threats allows the company to meet or, better, discourage this risk from the start.

Materials and Vendors

Most companies obtain the materials used in their components from outside vendors. Few companies are so vertically integrated that they make everything themselves.

This situation involves the risk that faulty materials may be used in a given product. A recent case in point involved a construction company that built concrete tilt-up warehouses. They relied on concrete supplied by vendors. There were strict specifications regarding the concrete. The vendor, however, delivered concrete that was below grade. It was used in the building, and a portion of the third floor fell onto the second floor, killing two construction workers and injuring several others.

Delivery poses an additional risk regarding material. Most manufacturing firms have tight production schedules; they can't wait long hours for critical materials needed on the assembly line. Not only do delays in delivery disrupt the production line, they also cause shipping dates to slip and, in many cases, the company may be subject to contractual penalties for nonperformance.

PEOPLE

People present a risk that is by far the most difficult to control. Few of us can anticipate the errors made by others. This risk permeates the entire organization, from the boardroom to the production floor. Expert supervision and review of employees' work provides the best defense against people risk. Above all, install a management system that holds people accountable for their actions and rewards competence.

Here are some of the risks people represent for the company.

Judgment

Managers are seldom at a loss to relate a story of unbelievably poor judgment by an employee. Few of us can predict when the usually infallible judgment of someone who had been trusted may go haywire. Nevertheless, poor judgment on the part of employees presents a major risk for most companies.

Skill

Most companies count the skill and experience of their employees as their greatest asset. The risk that key skills may be lost can be lessened by succession planning. Training employees as backup for important managers and supervisors ensures continuity of knowledge and authority when people are promoted or leave the company.

Accidents

Most accidents happen for a combination of reasons. People usually account for at least one of the causes. Often, the accidents are compounded by drugs or alcohol. Companies can minimize the risk of accidents with safety policies and training programs. Hiring practices and screening should reflect the company's policy against drug and alcohol abuse.

Some accidents are not confined to the business but affect the outside environment. These accidents can severely damage the organization's reputation. Apart from moral issues, the business itself may suffer financially as a result of the increasing ability and readiness of society to sue for damages. The $1 billion settlement Exxon offered the state of Alaska for its oil spill is a case in point.

Crime

Businesses are subject to every crime known to society but most criminal activity in business is focused on a company's assets. A policy to control criminal risk in a business should recognize the potential for arson, embezzlement, theft, assault, terrorism, sabotage, and fraud.

Industrial Disputes

Threat of a union strike or other job action can present a major risk, not only to the long-term profitability of the company, but also to its daily operations. Contingency plans should be prepared so the company can function during a strike. The plan should deal with the financial, public relations, and operational impact of a union action.

PROCESS

Most companies follow an established process for creating the product or service they sell to the market. This process, which is most easily seen in manufacturing companies, involves two major risks.

Breakdown of the Process

When the manufacturing line breaks down, production stops. If it's down for too long, shipping schedules slip. Customers who can't wait for your product may turn elsewhere; and once your former customers are in your competitor's door, the competitor won't surrender them easily.

Production and shipping schedules always carry risk. That risk can often be decreased with available back-up equipment. Businesses with computer installations frequently contract for alternative hardware in the event of a catastrophic failure. This was seen in 1990 when the New York Federal Reserve Bank's wire-transfer capability ground to a halt as the result of a fire in a neighboring electrical plant. The largest electronic funds-transfer system in the world was working again within an hour, running at a backup site miles away.

Inherent Dangers

The processes employed by businesses can often cause damage—to the environment, to company employees, and to the public at large. Two unfortunate examples include the Chernobyl and Bhopal disasters. Industries such as mining and construction are especially prone to this risk.

ASSETS

Physical Assets

When people think of risk management, they often look first at insurable assets. Certainly, plant and equipment fall into this category; they can be insured against physical damage or destruction, allowing the company to control the loss. However, there is much plant and equipment risk that cannot be insured against. Insurance against loss from technological obsolescence or improper use of equipment generally cannot be purchased. These things just happen, yet they undermine the asset's value to the business.

Financial Assets

Debts can go bad and investments can suffer a loss. These events hurt profitability. The recent real estate downturn suddenly devalued the collateral that many thrift institutions in this country held on mortgage loans. When the loans went bad and the thrifts foreclosed on the underlying real estate, they wound up with assets worth less than the amount loaned against the property.

REPUTATION

Damage to an organization's reputation can be one of the most serious risks. Reputation, goodwill, and consumer confidence are among the company's most valuable assets. Without them, product demand plummets. However, management often overlooks the risk of damage to these assets, and once a business's reputation is tarnished, the extent of the damage snowballs. Unless something is done, a damaged reputation can affect all the other areas of the business.

Often the damage comes from erroneous reports. For example, a company was accused in a television show of selling products to Iraq during the Persian Gulf War. The reporter had the facts wrong. The company never sold any of its products to Iraq—and could prove it. Still, there was immediate public outrage against the company. Sales plunged along with employee morale. Management quickly stepped in and mounted a vigorous publicity campaign to get the truth out. This eventually led to a front-page article in the *Wall Street Journal* and a public retraction from the television show's producers.

BUSINESS ENVIRONMENT

No business operates in a vacuum. Within the business environment, there are many types of risk. Since these are external, management's ability to manage them is diminished.

The Economy

Economic changes are always crucial to a business. Booms, recessions, inflation, deflation, and slumps all have a major impact on demand, prices, interest rates, and foreign currency exchange rates. Businesses subject to economic swings must protect themselves against circumstances that could adversely affect their operations and their markets. Many companies at the mercy of one industry acquire another company with an up-cycle that is opposite that of the parent. This way, they always have one company doing well to help fund the struggling entity.

Government and Politics

Taxation, legislation, trade restraints (or lack of them), and accounting rules can all have a significant effect on a business or its markets.

A change in government or in the government's relations with other countries can be harmful to your business as well as to your customer's. This was seen most recently in Iran, Iraq, and Mexico.

One of the worst risks continues to be the threat of nationalization of assets located in foreign countries. In that event, businesses are forced to walk away from millions of dollars in company-owned equipment and facilities.

Society

Public attitudes affect demand and tolerance for certain products. The tobacco industry, for instance, has been under attack for years, and has reduced this risk by diversifying and changing its technology as well as its advertising campaigns.

Shifts in population, such as the rise and fall of the baby boom generation, can cause changes in the demand for products. These shifts, however, occur slowly and are adequately predicted. Usually, social changes such as increased environmental awareness present more opportunities than risks.

Nature

Natural conditions, such as the weather, can affect some seasonal markets or the products supplied by those markets. The price of orange juice, for example, is directly related to the weather in California and Florida. Freezes in either of those states sends the commodity futures price for fresh-frozen orange juice through the roof. Natural disasters (such as storms, floods, droughts, epidemics, infestations, and earthquakes) can create a major disruption in specific markets. For example, the 1989 hurricane in the Caribbean wiped out the tourist industry in several island nations.

CHANGE

Change creates risk. Change can create adverse circumstances, and the effect of an adverse change is magnified when managers fail to anticipate the change correctly and act accordingly. Change can also be positive. Indeed, the changing business environment affords more opportunities than hazards if management deals with it aggressively.

However, even positive changes carry risk when they are uncontrolled. For example, when demand for a product explodes, the company may die trying to fill that demand. Management's attention becomes fragmented; purchases of raw material grow to a point where profit margins are reduced just to get product in the door and on the assembly line; receivables launch into orbit.

Still, management tries to get while the getting is good. Cash balances fall and the company finds itself way overextended. The interest rates at which lenders fund working capital requirements wipe out any profit margin that may have been left after negative manufacturing cost variances. The company's very success becomes its undoing.

Change in Risk Tolerance

Part of the process of identifying the risk of change is realizing that a company's level of risk tolerance also changes.

It would first appear that a business's tolerance for risk diminishes as the business matures. Companies starting out usually take substantial risks just to open their doors. These risks are unavoidable because, for a fledgling business, there are a large number of unknowns. Besides, young companies have less to lose than their more established counterparts. As the firm grows, risks that were once acceptable (because there was no choice) gradually become less tolerable. There's more to lose and management tends to protect what they have.

However, a company's tolerance of financial risk actually increases as the company grows. Although the dollar amount of funds placed at risk far outstrips what the firm was willing to wager in the beginning, the percentage of total assets at risk declines.

Tolerance of the risk of error also increases as a business grows. New companies with a single product must have a 100-percent success rate to stay in business. As the firm grows and offers four products, their success rate can drop to say, 75 percent (three winners and one dud). Larger firms with more products serving many different markets have an even wider margin of error.

As the business and its competitive environment change, management must routinely evaluate the level of risk that may be tolerated. They should keep in mind that three factors determine a company's capacity, at a given time, to tolerate the risk: (1) the maturity of the company, (2) financial strength, and (3) management's appetite for risk. Management should also note that practices that may have been conservative before have a way of subtly taking on risk. Furthermore, techniques for controlling risk also change.

Strategies that were once considered beyond the firm's threshold of risk tolerance often become possible using new techniques for risk avoidance. For thrift institutions in the 1980s, the popularity of interest rate swaps suddenly reduced their interest rate risk and, correspondingly, allowed them to increase the risk of loans they were willing to fund. The net result was a tolerable risk.

A Challenge to Management

Change challenges any management team. Management must strike a balance between growth, the business's inherent risks, and maintaining profitability. The risk of failure can, however, be controlled. All it takes is identification of the risk, assessment of the potential return, and a decision either to take the risk or pass. The following are examples of growth risks that can be assessed and controlled:

- *Launches of new products.* The risk is that the existing business will not have the capacity to absorb losses if the new product fails.
- *Acquisition of other companies in unfamiliar industries.* Because of inexperience in the new industry, management often has little idea of the risk it has undertaken until it's too late. Even though the move itself may be designed to reduce risk in the long term (diversification, for instance), there are always unwelcome surprises.
- *Neglect of the core business.* This risk results from a company's attempts to expand in new directions.
- *Incurrence of debt.* This is an obvious risk, but incurring debt can reduce the margin of error in a company subject to economic peaks and valleys.

Chapter 2

Risk Assessment

To evaluate an opportunity and the risk it entails, you need to assess the probability of the risk occurring and its possible impact. Like an emergency room doctor, we practice a form of triage when assessing risks. We prioritize risks, which are usually arranged with the most damaging first. From there, we sort through those we can control. Risks not under our control are saved for later treatment.

Effective assessment of risk depends on management's experience, judgement, and knowledge of the business. These necessary qualities can be enhanced by sharing the experience of similar companies through trade associations and chambers of commerce. The appointment of outside directors also broadens the collective experience of the management team. When the business moves into unfamiliar markets, outside consultants can fill the gap by helping assess the risks involved.

ELEMENTS OF RISK

We judge the importance of risk based on two factors:

1. Probability of the risk occurring

2. Impact if the risk does occur

Risk Probability

Assigning a probability to an event falls somewhere between art and actuarial science. Large companies with analytical resources conduct sophisticated probability studies when evaluating particular risks and opportunities.

As the probability of risk grows, its importance rises, though generally as a function of its potential impact. Conversely, as the potential impact grows, its importance rises, often with *little* regard to its probability. That is why companies can sell insurance policies — because people are more conscious of the *possible damage* than the probable occurrence.

Certain events lend themselves to statistical probability analysis more easily than others. These usually have a natural cycle (such as storms or floods) and a long history over which the analysis can be conducted.

A good way to become aware of external risks is to use economic forecasts and market studies. Analysis of competitors' financial statements and review of technological developments all help to identify and assess upcoming threats.

The business can generate its own information about specific activities that have been identified as potential internal risks. Accidents, equipment breakdowns, and customer complaints may raise a flag that a problem exists that could damage the firm.

Certainly, the farther out we forecast, the less reliable our predictions will be. Beyond five years, our planning assumptions become broad and more strategic in nature. However, risks far in the future that are identified and assessed provide the best candidates for control. Twenty years ago, the environmental movement began to gather steam, and as many as fifteen years ago, the public outcry against the tobacco industry was foretold. Each of these social issues presented risks, but also opportunities, for those companies who properly assessed the implications of these issues and took action.

Potential Impact

The effects of a risk can be put into financial terms as the cost of replacing a person or asset. Add to this the cost to the company of the person's or asset's absence. Bear in mind that the impact of risk on tangible assets is easier to measure than on intangibles such as reputation or goodwill.

In addition, there may be collateral damage. Companies that are vertically integrated often find a domino effect of a loss at one level disrupting everything below.

Political, social, and economic risks generally threaten sales. Therefore, the potential loss can be assessed by lowering the sales assumptions in a company's planning models.

Legislative risk affects the way companies conduct their business. Changes in laws regarding the amount of toxic pollutants emitted, hiring and firing policies, and reporting and disclosure requirements all have an impact on the way the firm does business.

Indirect risks sometimes form within the company. These are hard to detect and can affect such things as goodwill and customer perception of a business. The case of Toshiba Corporation was one such risk example. Who in that giant conglomerate could have envisioned that one of its divisions would sell to the Soviet Union top-secret technology the United States was using to produce silent propellers for its nuclear submarines? There was backlash against *all* divisions and Toshiba products, particularly in the United States.

METHODS OF EVALUATING RISK

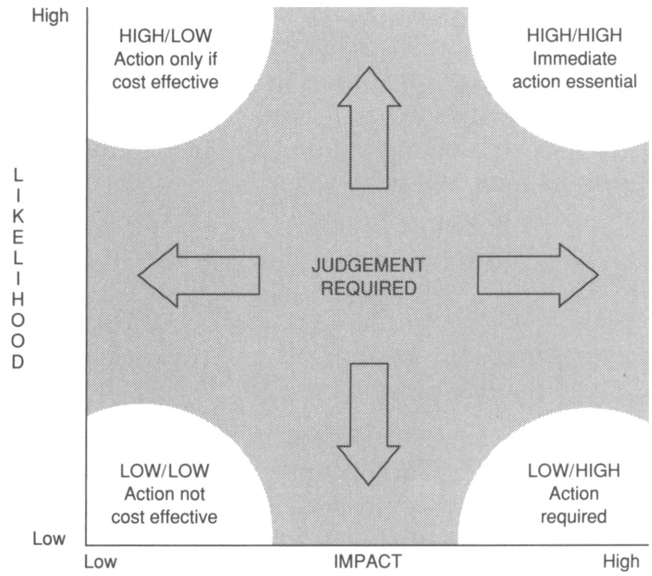
Business Risk

Decisions about which markets to attack, which products or services to provide and how to promote them, who to employ, and which suppliers to use all involve risk. For each of these decisions, the closer the expected values of risk versus reward approach parity, the more ambivalent management feels toward taking the risk. After a certain point it says, "The reward does not compensate us enough for the risk we're being asked to take." Decisions made beyond that point are foolish.

Exhibit 2.1 illustrates how risk impact and risk probability coordinate.

Exhibit 2.1

A Framework for an Organization's Policy and Action Toward Risk



Using this graph, we see different levels of management response given probability and impact. The graph is divided into four quadrants.

1. *Low likelihood/low impact.* Acceptable risk and management action is not cost-effective in this area. Therefore, management does little to control this risk. An example would be the need for key-executive insurance on a young, healthy accounts receivable clerk. The probability of death is low, and (this may sound callous) the individual can be easily replaced.
2. *High likelihood/low impact.* Management must assess its action to control such risks by recognizing the cost of prevention compared with the benefits derived. Good operating procedures reduce the likelihood of the risk occurring. Furthermore, with proper procedures, the probability of occurrence may be reduced from high to medium, or even low. Most risks in this area are diversified, with occasional losses being offset by sporadic gains.

Insurance is often less effective in this case because premium costs outweigh the expected value of the loss should the event occur. An example would be mortgage insurance for an elderly couple with a very low mortgage compared with the rest of their assets.

3. *Low likelihood/high impact.* These risks are difficult to analyze logically. Statistically, the expected value of loss must be compared with the cost of control. However, the impact is often so high and emotionally offensive (such as bankruptcy) that risk control measures outstrip their cost/benefit. The trade-off is management's peace of mind.

   An example is insurance purchased by an airline against midair collisions. The probability of an event occurring is low and continuing to fall as technology improves. However, all it takes is one incident and the airline may well have to close its doors.

4. *High likelihood/high impact.* This is the most serious risk. The business quickly reaches the point where its survival becomes more important than short-term profits. Management must control these risks. One such example is the effect of interest rate movement on a bank's loan portfolio. Rates move continuously. However, a prolonged shift in one direction (upward, for example) would cause a thrift institution (that lends long and borrows short) to lose its profit spread. Management controls this with floating rate loans and deposits, as well as with financial instruments such as interest rate swaps.

   An example of a high-impact risk was the A. H. Robbins Pharmaceutical Company. Robbins knew that marketing a potentially harmful intrauterine device was extremely hazardous. They thought the Dalcon Shield was safe, but they guessed wrong. Class action lawsuits forced the company into bankruptcy.

When the damage from a potential risk could ruin the firm, the risk becomes a top priority regardless of its probability of occurrence. Conversely, risks with little impact, regardless of their probability, are of little concern.

Risk assessment requires constant review. New information regarding projected damage and probabilities changes both short-term budgets and long-term plans. Risks caused by the external business environment often result in a complete change of strategy. An example is the possible creation of a single European market in 1992. Undoubtedly, this would create many new risks and opportunities for U.S. businesses competing overseas.

Business Opportunity

Larger firms are more able to pursue opportunities; however, the risk evaluation methods used by large companies are no different than those used at smaller firms:

- Compute the probability of an event occurring.
- Estimate the potential damage if the event does occur.
- Multiply the probability by the cost of damage to arrive at an expected value of the loss.
- Add a value for profit, aggravation, and taking the risk in the first place.
- Discount the total cost back to present value.
- Determine the possible benefits of taking the risk against the potential costs. If the benefits don't outweigh the costs, taking the risk would be foolish.

For example, we want to introduce a new product. The risk is that we underestimate demand. Let's say that we have estimated this probability at about 20 percent. In this case, the loss is $1 million. Therefore, the expected value of the loss is $200,000 ($1,000,000 × 20% = $200,000).

The profit, however, is expected to be $5 million with an 80 percent probability. The expected value of the profit is therefore $4 million ($5,000,000 × 80% = $4,000,000).

The decision provides a net expected profit value of $3.8 million ($4,000,000 − $200,000 = $3,800,000). Clearly, this is the type of risk we all should take.

The decision whether to take the risk becomes simple. If the expected value of our return exceeds its cost by whatever margin is acceptable to management, we take the risk; if it does not, we don't.

Opportunity and risk are two sides of the same coin. Organizations must take risks to exploit the opportunities facing them. The trick is to never expose the business to a risk greater than the *expected value* of the return.

Chapter 3

Risk Management

Risk management involves three steps:

1. Identify possible risks.
2. Determine their potential for damage.
3. Figure out how to bring them under the threshold of acceptability.

Senior management determines risk limits, structure, and authority of risk management decisions. Typically, risk policy covers the following areas:

1. Asset risk
2. Financial risk
3. Market risk
4. Product risk

Within each of these categories, the particular types of risk that management has targeted are defined. For example, to control financial risk we establish policies regarding credit and accounts receivable, interest rates, borrowing, theft and embezzlement, investments, and borrowing and capital.

Effective risk management policy requires a regular review of all the firm's business risks as well as its opportunities. This review is part of the planning process. Changes in circumstances are evaluated in relation to their impact on the organization and its business. Plans are adjusted to control risk, take advantage of opportunities, or both.

Effective risk management means that management policies and goals are communicated throughout the business. Those responsible for implementing risk policy must understand management goals and the level of risk they are authorized to take. These managers are responsible for identifying risks in their divisions and for maintaining them within policy guidelines.

Risk management decisions involve an assessment of control costs versus the likely damage arising if no action were taken. Those investing in risk reduction techniques should assess the return on investment for the particular risk being analyzed.

As discussed in chapter 2, to assess risks and opportunities you need to judge the probability of the risk occurring and its possible impact. Similarly, there are two ways to manage risk:

1. Reduce the probability of the event occurring.
2. Lessen the impact on the business if the event does occur.

Although many of the methods discussed here are designed both to reduce probability and to reduce impact, the two topics will be considered separately.

REDUCTION OF PROBABILITY

Strong management involvement and supervision in high-risk areas goes a long way toward focusing everyone's attention on risk control techniques. An understanding of risk techniques by all employees contributes to the overall effectiveness of a risk management program.

Once the risk has been identified, take actions such as the following to reduce its probability of occurrence:

- Bring in a specialist with the necessary expertise to minimize the risk. For example, contract out the transport of a hazardous substance if your employees are not skilled in this task.
- Reduce your dependency on a key supplier by dual sourcing of crucial materials.
- Lower your dependence on particular customers by expanding marketing efforts.
- Implement a risk-warning system in the areas you have already identified as threatening. For banks, monitoring of interest rate forecasts is one such method. Using this information, the bank deploys automated interest rate risk control systems to fine tune their strategies. Companies particularly sensitive to a competitor's pricing moves constantly monitor market volume and sales prices. The information then flows directly to the marketing and pricing decision makers for action.
- Conduct market research to anticipate changes in product demand and formulate responses.
- Make physical improvements (such as changes in factory or office layout) to reduce the potential of fire. Install security cameras and controlled access areas to deter the possibility of theft.
- Establish a strong safety program and maintain safety equipment. Be sure that the firm complies with all health and safety regulations. To do otherwise leaves you liable for an unsafe work environment. Keep safety manuals and safety statistics to help implement your program.
- Conduct risky activities in an appropriate environment. If the current facilities do not accommodate particular activities, move them to a location that does. For example, there should be a sprinkler system (along with other requisite safety gear) at a plant that makes fireworks.

REDUCTION OF IMPACT

Many business owners focus their risk management attention on *insurable risk*. In these cases, risk management focuses only on damage control. Although insurance plays an important part in overall risk control strategies, it's only one of the tools available for reducing the impact of risk. In addition to insurance, modern business uses a variety of instruments to limit the impact of risk:

- Financial instruments (such as foreign currency hedges, options, and commodities futures contracts) reduce the impact of price fluctuations.
- For banks and other leveraged companies, computer models and cash flow swaps control interest rate risk.
- Test marketing limits the risk of exposure to new product development costs.

The list goes on, but the concept is the same for each method: identify the risk, assess and quantify the exposure, and act to insulate the company from risk.

Insurance, hedging, and contingency planning—the three most common ways of managing risk—are discussed in greater detail in the following sections.

Insurance

Premiums represent a relatively small price to pay for reducing or eliminating the impact of a large loss. The most common business insurance policies cover fire, theft, worker's compensation, liability, and business interruption. Beyond that, individual policies, such as the following, can be purchased to cover specific circumstances:

- General third-party liability
- Product liability
- Patent infringement
- Key-man life insurance
- Employee bonding
- Goods in transit
- Professional indemnity insurance

Insurance coverage (for a price) can be obtained for practically any risk. Often, custom policies are written for just one event.

Most insurance coverage is purchased from an insurance broker. These people are specially trained in risk management techniques and have access to the products of several insurance companies. To choose and maintain an insurance broker, follow these procedures:

- Obtain proposals from several brokers.
- Get broker referrals from other businesses in the same field.
- Do all your insurance business with one broker. It's simpler. You only have to teach your business to one broker, and the bigger the account, the greater the broker's commitment and *your* leverage.
- Establish your risk impact reduction goals, and use these goals as criteria for monitoring the broker's performance.

You should ask yourself the following questions about your chosen insurance broker:

- Does the broker know your business? If your market is specialized, you may need to use brokers who specialize in that field.
- Does the broker have the necessary experience and contacts to obtain competitive quotes on policies?
- Can the broker give you advice and help in general risk management? Can he or she assist in dealing with claims? Competent professional insurance brokers offer a greater service than just finding policies.

These are six characteristics that distinguish one insurance policy from another:

1. Coverage
2. Flexibility
3. Price
4. Backup services
5. Attitude toward claims
6. Speed in settling claims

Make sure your broker understands your views and your company's requirements for each characteristic.

Self Insurance. Insurance premiums have become so expensive that many companies are either all or partially self-insured. Self-insurance takes on a variety of forms:

- Accruing a reserve each month to be used toward covering losses
- Forming a captive insurance company that insures the parent firm and its subsidiaries
- Using a combination of external and self-insurance

Keep in mind, however, that self-insurance requires you to take some or all of the loss risk.

Hedging

Hedging techniques are used to reduce the impact of risk, not the probability. Smart financial hedgers can actually eliminate the impact of a risk altogether. The most common types of hedges are commodity and currency hedges. In a currency hedge, the company insulates itself against an adverse change in the conversion price of foreign currency they may owe or be owed. Risk can be eliminated altogether when trading in foreign currency futures contracts by purchasing a call option contract in the currency at a fixed price. The technique reduces both uncertainty and the risk of loss.

Forward exchange contracts, swaps, and options are used by corporate treasurers to protect the business against foreign currency movements, adjustments in commodity prices, and changes in interest rates. These techniques are sophisticated and, if not used correctly, can backfire, causing losses to exceed what they would have been had the techniques not been employed. Therefore, hedging techniques are best handled by experienced professionals.

Contingency Planning

When adversity strikes, companies seldom have the time to sit down and figure out what to do. Contingency planning establishes agreed-on plans of action in the event of specific occurrences. Most cities, for example, have disaster plans that automatically go into effect when a combination of circumstances occur.

Contingency plans are most effective for significant sources of risk such as site disasters, destructive computer malfunctions, bankruptcy of key suppliers, and withdrawal of bank credit lines.

"What if" questions, such as the following, can be useful in formulating a contingency plan:

- What if an important machine was damaged by fire? Are there backup facilities available?

What would be the impact on the business of such a fire?

- What if there was a power failure and all the firm's computers went down? Could data processing be transferred to an outside agency? In the meantime, how would the resultant loss of data or information be dealt with?
- What if a serious product defect was discovered? What public relations would be done? At what point would you recall the product? How would you protect the public?
- What if disaster befell your key supplier? Would alternative suppliers be available? If so, at what price? How fast could the alternative suppliers provide the necessary items? Would any manufacturing changes have to be made?

Standby facilities figure prominently in contingency plans. In an emergency, companies must have access to physical assets such as the process plant, power generators, and backup computer facilities. Many treasurers use standby credit facilities in the event of emergency cash requirements or denials of credit by lead institutions.

Transfer of Risk

A common way to transfer risk is to share a business opportunity with a number of partners. Of course, this reduces your overall return; however, your risk drops as well. For high-risk ventures, transferring risk often brings the risk more into line with the expected value of the return. Banks do this when they form a lending syndicate to fund particularly large loans to a single customer.

EVALUATION OF RESULTS

Senior management sets risk policy and acts to bring risk exposure within the policy's guidelines. The next step is to ensure that the right action has been taken. The risk environment constantly changes, so that exposure to risk must be continuously assessed. From there, policies are changed and new management actions are implemented.

THE RISK MANAGER

Effective risk control procedures require that a single person be responsible for the entire process of identifying, assessing, and implementing control measures and evaluating the risk program. This individual should report to senior management on a regular basis. Any corrective action that this risk manager takes should carry the authority of the most senior executives in the company.

The risk manager should be able to answer each of the following questions:

- Does the firm's risk exposure comply with the level established by policy guidelines?
- Where are the significant areas of risk, and who in each area is responsible for keeping exposure within tolerable limits?
- Do the risk control actions yield a benefit exceeding their costs?
- What changes within the company and in the market cause risk exposure to change?
- Are effective contingency plans in place to deal with the low-probability/high-impact risks? Have these plans been practiced so they can be implemented with a minimum of disruption to profitability?
- Does the company have insurance coverage appropriate for the risks it undertakes?
- Should risk policies, control procedures, and contingency plans be reinforced to lessen the exposure to risk? Alternatively, should risk be increased to expand profit potential?

To assist the risk manager, a Summary of Plan of Action is included in appendix B.

Appendix A

Case Study: MTH Enterprises

The following case study demonstrates how the risk management techniques discussed earlier are used. Watch how management identifies, assesses, and implements a mechanism to control its risk.

BACKGROUND

MTH Enterprises built its small aerospace fastener business in the mid-1970s when cost-plus contracts were widely used. MTH's facilities and policies have changed little since that time. As competition intensified and fixed-price contracts became more common, profit margins narrowed.

Management discovered that losses from two unprofitable years had reduced MTH's margin of error. MTH's ability to withstand moderate risks, which were once readily accepted, had diminished. Instead of being the industry leader, MTH was now taking a defensive posture, struggling to maintain its market share.

Because of shrinking margins, MTH undertook a severe risk reduction program. Management wanted to insulate the company from unnecessary risk that could force it into receivership. The president engaged a professional risk consultant to oversee the identification, assessment, and management of risk. Here are the steps MTH went through.

RISK IDENTIFICATION

All possible sources of risk were identified as follows:

1. MTH's products do not incorporate state-of-the-art technology. Competing products contain many of the technological innovations MTH has failed to introduce.
2. Because existing plant and manufacturing facilities are out of date, products are priced at the high end of the market.
3. Management drags its feet in making even the most basic product enhancements. As a result, competitors who respond quickly to changes in demand have captured some of MTH's market at the expense of its reputation as an industry leader.

   Management's ineffectiveness has caused a general loss of morale. As a result, there has also been a gradual production slowdown. MTH now runs its production line at only 85-percent capacity, whereas its competitors, using the same number of labor hours, enjoy a 15-percent production premium.
4. Five of the firm's most skilled equipment operators just resigned in frustration with management's inability to make decisions important to the production line. Efficient operation of the production facility suffers from loss of these people.
5. The company's accounts receivable are rising because of poor credit control systems.
6. Unfavorable terms imposed by raw material suppliers have forced MTH to increase working capital requirements.
7. Pending legislation may terminate the SBA loan program from which the company draws a portion of its financing.

8. An unfavorable trend in product liability claims also poses an increased risk of lawsuit.
9. MTH's obsolete manufacturing plant just squeaks by local pollution and toxic discharge requirements. This problem has recently caught the attention of the Environmental Protection Agency.

Sounds pretty dismal, doesn't it? But the first step in solving the problem was to identify the issues. Painful though that process may have been, the company now understood what it was facing.

RISK ASSESSMENT

Next, MTH assessed the probability and impact of each risk it had identified. These risks were listed in order of severity.

High Probability, High Impact

- Products lack state-of-the-art technological innovations.
- Production facilities are technologically obsolete and cannot produce at competitive costs.
- Changes in market demand certainly occur and have a major impact on the company.

The first two risks have an immediate—possibly fatal—affect on the business. The third takes place over a longer period. Because of MTH's sluggish way of responding, however, they had better get started on this one now.

Medium Probability, High Impact

- MTH management view morale of the work force as a risk that can be quickly fixed by using the right combination of incentives and rewards. If not addressed, the personnel issue could present a significant risk. However, management believes there exists only a medium likelihood that their plan will fail.
- Management thinks that loss of skilled labor creates a morale problem more than it does a long-term manufacturing issue. When people see some of their most skilled co-workers leave, they begin to wonder what those people know that they don't. Furthermore, MTH believes that the importance of skilled labor diminishes the more high-tech manufacturing equipment is introduced into the production lines.
- Credit control and rising working capital requirements undermine the business. However, there are enough borrowing facilities available to meet the company's cash demands. Management views credit and receivables as a significant, but not potentially fatal, risk.
- Unfavorable purchase terms from suppliers is only a medium risk. However, if several key suppliers suffered a disaster that put them out of business, MTH *would* have a significant problem.
- SBA funding changes are not likely to be implemented for three years. If management does not respond, this could have a significant impact. However, for MTH, three years is practically a lifetime away.

Low Probability, Low Impact

- MTH's attorneys advise that product liability suits pose no risk because their policy is to defend the company against any and all attacks, but bear in mind that this is lawyer talk for "Continue paying my retainer."
- Environmental damage concerns MTH management from a public relations standpoint primarily. MTH's waste disposal policies are within the letter of the law. However, the risk of environmental damage is always possible. Since the firm does not sell to the public, the impact of such a risk on MTH's business should be low.

RISK MANAGEMENT

Management prioritized the risks on which resources were concentrated. They formulated a plan of attack to deal with each identified risk, and the following shows how they implemented the plan:

- *Product quality.* To avoid potential damage to the firm's reputation for providing quality products, management replaced outdated and inefficient manufacturing processes with modern equipment and improved techniques.

MTH then produced better products, and produced them faster and cheaper. MTH's prices fell and profit rose. The payback on this investment is estimated to be four years.

- *Management information.* Lack of information prevented management from making informed decisions. The vice president of finance therefore took on the post of chief information officer. He now had responsibility for obtaining, evaluating, and communicating the following information—
  - Product quality versus competition
  - Product pricing versus competition
  - Manufacturing technology
  - MTH's market position relative to the competition
  - New-product development
  - Pending legislation that could affect the company
- *Manufacturing efficiency.* Management brought in outside consultants to identify the optimal plant layout and the new equipment required to make the manufacturing operation more cost-efficient. The consultant's recommendations were accepted. MTH closed the plant for a month to reorganize the production line and install the new equipment it purchased.

  The cost of these improvements was recouped in eighteen months from lower manufacturing costs, less rework of finished goods found to be defective, and more efficient use of skilled labor. In addition, the turnover of plant personnel stopped since management began taking positive action to improve things.
- *Surplus capacity.* As a result of the efficiency brought about by the new equipment and the reorganization of the plant, one of the manufacturing lines in one of the buildings was shut down. MTH stored some of the now surplus equipment as backup and sold the rest. The unused building was sold at a profit exceeding $3 million. The money was used to repay a portion of the firm's debt. This lowered the debt/equity ratio and allowed MTH to negotiate lower interest rates on the company's other loans.
- *Supplier dependency.* Management investigated the possibility of dual sourcing. However, the added cost from reengineering and reduction of bulk purchase discounts was considered too expensive. Instead, they decided to carry the risk of supplier dependency, but they began negotiating with several alternative suppliers to use as backups in the event their main supplier failed.
- *Credit controls.* Management fired the credit manager and accounts receivable supervisors. Their replacements were charged with establishing modern systems of credit authorization and receivables collection. Specific credit authorization guidelines were formulated and put in writing. Management now evaluates the new credit manager's performance each month against these benchmarks.

  Adequate accounts receivable guidelines were already in place; the ex-supervisor just never bothered complying with them, nor did senior management require her to. That changed immediately. In addition, insurance for bad debt and bad credit was taken out on specific receivables thought to be of too high a value to risk losing.

  The ex-credit manager sued the firm for wrongful termination. MTH settled the suit for $25,000. Additional cash flow from the performance of the new receivables supervisor covered this outlay within six months.
- *SBA financing.* The investment in modern manufacturing equipment and the plant reorganization was funded internally, thus eliminating the risk of the SBA changing its policies.

  A new cash flow projection indicated that current credit facilities were adequate without additional borrowing in the foreseeable future.
- *Product liability claims.* The risk of product liability claims resulting from faulty manufacturing and faulty quality control procedures was reduced as a result of the new plant and equipment. The remaining risk from litigation was covered by a new insurance policy.

  An in-house lawyer was hired to keep the company out of court. This new emphasis on *preventive law* was directed at product liability claims as well as other sources of litigation.

Although the cost of settling legal disputes before they reach the litigation stage rose and the company now had the salary of their in-house lawyer to pay, overall legal costs were expected to actually fall. No longer would the firm enter into protracted and expensive litigation. The monthly retainer that was paid the outside law firm was stopped.

MTH's three-phase action plan included—

1. Identification of risk.
2. Assessment of the probability that each risk would occur and its potential impact.
3. Execution of a plan to bring each risk within acceptable tolerances.

Using this formula, MTH's management not only controlled risk, but also improved profits.

Appendix B

Summary of Plan of Action

The following list summarizes the plan of action discussed in this booklet.

1. Identify the essential elements of your business. These are the things you need to protect from undue risk.
2. If appropriate, prepare a separate list of essential elements for each division. Do not generalize. The greater the detail, the more information you have.
3. Identify those areas that change. Be sure to reassess these regularly.
4. Determine the risk priority of each essential element. The four headings on the risk matrix provides a convenient starting model.
5. Establish limits of acceptable risk for the items you have listed.
6. Compare these limits with your assessed risks to identify unacceptable exposure.
7. Determine ways to manage the risk exposure that you have identified as unacceptable.
8. Calculate the cost/benefit of each action, then implement your risk reduction program.
9. Establish procedures for monitoring the effectiveness of your risk management program.

Appendix C

Suggestions for Further Reading

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