



MAKING ENTERPRISE RISK MANAGEMENT PAY OFF

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Introduction

Risk—let's get this straight up front—is good. The point of risk management isn't to eliminate it; that would eliminate reward. The point is to manage it—that is, to choose where to place bets, and where to avoid betting altogether.

Thomas Stewart, *Fortune*¹

As businesses worldwide enter the twenty-first century, they face an assortment of risks almost unimaginable just 10 years ago. E-commerce has become ingrained in society with amazing speed: Companies that cannot keep up are doomed to obsolescence in record time. Technology is driving business models to be retooled in months instead of years. The traditional gatekeepers of information are being supplemented with the Internet democracy in which anyone with a PC can disseminate information widely and quickly—for good or bad.² Derivatives, which were originally intended to help manage risk, have themselves created whole new areas of risk.

It is probably axiomatic that well-managed businesses have successful risk management. Over time, a business that cannot manage its key risks effectively will simply disappear. A disastrous product recall could be the company's last. A derivatives debacle can decimate staid old institutions over a long weekend. But historically, risk management in even the most successful businesses has tended to be in “silos”—the insurance risk, the technology risk, the financial risk, the environmental risk, all managed independently in separate compartments. Coordination of risk management has usually been nonexistent, and the identification of new risks has been sluggish.

This study looks at a new model—enterprise-wide risk management—in which the management of risks is integrated and coordinated across the entire organization. A culture of risk awareness is created.

Farsighted companies across a wide cross section of industries are successfully implementing this effective new methodology.

An Abundance of Uncertainty

Uncertainty abounds in today's economy. Every organization is, to some extent, in the business of risk management, no matter what its products or services. It is not possible to "create a business that doesn't take risks," according to Richard Boulton and colleagues. "If you try, you will create a business that doesn't make money."³ As a business continually changes, so do the risks. Stakeholders increasingly want companies to identify and manage their business risks. More specifically, stakeholders want management to meet their earnings goals. Risk management can help them do so. According to Susan Stalnecker, vice president and treasurer of DuPont, "Risk management is a strategic tool that can increase profitability and smooth earnings volatility."⁴ Senior management must manage the ever-changing risks if they are to create, protect, and enhance shareholder value.

Two groups have recently emphasized the importance of risk management at an organization's highest levels. In October 1999, the National Association of Corporate Directors released its *Report of the Blue Ribbon Commission on Audit Committees*, which recommends that audit committees "define and use timely, focused information that is responsive to important performance measures and to the key risks they oversee."⁵ The report states that the chair of the audit committee should develop an agenda that includes "a periodic review of risk by each significant business unit."

In January 2000, the Financial Executives Institute released the results of a survey on audit committee effectiveness. Respondents, who were primarily chief financial officers and corporate controllers, ranked "key areas of business and financial risk" as the most important for audit committee oversight.⁶

With the speed of change increasing for all companies in the New Economy,⁷ senior management must deal with a myriad of complex risks that have substantial consequences for their organization. Here are a few of the forces creating uncertainty in the New Economy:

- Technology and the Internet
- Increased worldwide competition
- Freer trade and investment worldwide
- Complex financial instruments, notably derivatives
- Deregulation of key industries
- Changes in organizational structures resulting from downsizing, reengineering, and mergers
- Higher customer expectations for products and services
- More and larger mergers

Collectively, these forces are stimulating considerable change and creating an increasingly risky and turbulent business environment. Perhaps no force on the list is having as great an impact on business as the Internet. As the Internet comes of age, companies are rethinking their business models, core strategies, and target customer bases. “Getting wired,” as it is often called, provides businesses with new opportunities, but it also creates more uncertainty and new risks.⁸ In his book *The High Risk Society*, Michael Mandel states, “Economic uncertainty is the price that must be paid for growth.” To be successful, businesses must seek opportunities “where the forces of uncertainty and growth are the strongest.”⁹

The mismanagement of risk can carry an enormous price. In recent years, the business community has witnessed a number of risk debacles that have resulted in considerable financial loss, decreased shareholder value, damaged company reputations, the dismissal of senior management, and in some cases the destruction of the business. Consider the impact of the following events:

- Companies selling poor-quality or defective products, or unnecessary service, coupled in some cases with severely mishandling the crisis surrounding the product recall or service problem
- Environmental disasters and inadequate attention to the resulting crisis

- Rogue traders lacking oversight and inadequate controls assuming enormous risks
- Organizations trading in complex derivative instruments without understanding the risks involved
- Mergers destroying shareholder value
- Insurance salespeople churning customers' accounts
- Sexual harassment of employees
- Racial slurs by management and discrimination against employees

This increasingly risky environment, in which a debacle can have major and far-reaching consequences, requires that senior management adopt a new perspective on risk management. The new perspective should be one that not only prevents debacles but also enhances shareholder value. Indeed, the New Economy calls for a new risk management paradigm.

New Risk Management Paradigm

In thinking about a shifting paradigm for risk management, the recipe for boiling a frog is instructive. If you drop a frog into a pan of boiling water, it will jump out. But if you put the frog in a pan of cold water and gradually raise the temperature, the frog will stay in until the water boils, not realizing that its paradigm is shifting. In a similar fashion, the risk management paradigm has been shifting gradually for some organizations. Some of them may not have recognized the paradigm shift and the advantages of the new perspective on risk management.

Traditionally, most organizations have viewed risk management as a specialized and isolated activity: the management of insurance or foreign exchange risks, for instance. The new approach has its basis in keeping managers and employees at all levels sensitized to and concerned about risk management. Table 1.1 identifies three key aspects of this shift to an organization-wide perspective for risk management.

As noted in table 1.1, the risk management perspective for some organizations is shifting from a fragmented, ad hoc, narrow approach to an integrated, continuous, and broadly focused approach. The question

Table 1.1
Key Features of the New Risk Management Paradigm

Old Paradigm	New Paradigm
<ul style="list-style-type: none"> ■ Fragmented—department/function manage risk independently; accounting, treasurer, internal audit primarily concerned ■ Ad hoc—risk management done whenever managers believe need exists to do it ■ Narrowly focused—primarily insurable risk and financial risks 	<ul style="list-style-type: none"> ■ Integrated—risk management coordinated with senior-level oversight; everyone in the organization views risk management as part of his or her job ■ Continuous—risk management process is ongoing ■ Broadly focused—all business risks and opportunities considered

Source: Economist Intelligence Unit, *Managing Business Risks*, 10. A similar analysis is presented in DeLoach, *Enterprise-Wide Risk Management*, 15–16.

is whether senior management will make the shift consciously now or make it after the water heats up and a debacle occurs.

This new perspective on risk management is sometimes referred to as integrated, strategic, business, or enterprise-wide risk management, and we use these terms interchangeably. The term “risk” includes any event or action that “will adversely affect an organization’s ability to achieve its business objectives and execute its strategies successfully.”¹⁰ The scope of risk covers all risks, internal and external, that may prevent an organization from achieving its objectives. Adding the word *management* to integrated, business, or enterprise-wide risk implies a “structured and disciplined approach” that “aligns strategy, processes, people, technology and knowledge with the purpose of evaluating and managing the uncertainties the enterprise faces as it creates value.”¹¹ Hence, the goal of an enterprise-wide risk management initiative is to create, protect, and enhance shareholder value by managing the uncertainties that could either negatively or positively influence achievement of the organization’s objectives.

Studies of Risk Management

Enterprise-wide risk management is an emerging concept that has gained in popularity over the past decade. The recognition of a more risky business operating environment and, at the same time, increased accountabilities has led several professional organizations to address control and risk assessment in major publications. In addition, several of the Big Five accounting firms have produced documents expounding the value of enterprise-wide risk management.

In 1992, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) issued *Internal Control—Integrated Framework* (ICIF).¹² This pathfinding document departed from the traditional internal accounting control model by presenting a broad control framework of five interrelated components: control environment, risk assessment, control activities, information and communication, and monitoring. According to the document, control is the responsibility of the board of directors, management, and other personnel within the organization, not just the accountants. Particularly relevant is the identification of risk assessment as a vital component of control.

The growing importance of risk management is evidenced by the following major publications issued by professional groups since ICIF was published:

- Economist Intelligence Unit (in cooperation with Arthur Andersen & Co.), *Managing Business Risks—An Integrated Approach* (1995).
- Canadian Institute of Chartered Accountants Criteria of Control Board, *Guidance for Control* (1995).
- The Conference Board of Canada (by L. Nottingham), *A Conceptual Framework for Integrated Risk Management* (1997).
- American Institute of Certified Public Accountants, *Report of the Special Committee on Assurance Services* (1997).
- Canadian Institute of Chartered Accountants Criteria of Control Board, *Learning About Risk: Choices, Connections and Competencies* (1998).

- Institute of Internal Auditors Research Foundation (by D. McNamee and G. M. Selim), *Risk Management: Changing the Internal Auditor's Paradigm* (1998).
- International Federation of Accountants Financial and Management Accounting Committee (prepared by Pricewaterhouse-Coopers), *Enhancing Shareholder Wealth by Better Managing Business Risk* (1999).
- Joint Australian/New Zealand Standard, *Risk Management* (1999).
- Canadian Institute of Chartered Accountants Criteria of Control Board, *Guidance for Directors—Dealing With Risk in the Boardroom* (1999).
- The Institute of Chartered Accountants in England and Wales Internal Control Working Party, *Internal Control: Guidance for Directors on the Combined Code* (1999).
- American Institute of Certified Public Accountants/Canadian Institute of Chartered Accountants Risk Advisory Services Task Force, *Managing Risk in the New Economy* (2000).

While a few of these publications include case studies analyzing companies' experiences implementing risk management, most of the studies tend to advocate a particular generalized framework for risk management. Each of the publications listed, as well as others, appears in the annotated bibliography in appendix C.

Objectives and Approach of This Study

The objectives of this study are as follows:

- To present in-depth case analysis of several companies' risk management practices
- To identify emerging patterns in risk management that could be useful to companies in developing an enterprise-wide risk management system

The research is not intended to deduce from the case studies a uniform framework for risk management. If anything, the research indicates that when it comes to risk management, one model does not fit all companies.

With these objectives in mind, we identified five companies that were at various stages of developing an enterprise-wide risk management approach. At each company, we conducted in-depth interviews on site with senior management and other key employees. An interview protocol containing a list of questions guided the interviews (see appendix A). The case studies are based on the transcribed interviews, company-provided materials, and published information.

In selecting the companies, we sought a cross section from different industries. The five firms chosen are all public companies. They represent the agriculture (United Grain Growers), chemical (DuPont), energy (Unocal), financial services (Chase Manhattan), and technology (Microsoft) industries. Table 1.2 lists the study companies and key statistics for each.

Organization of This Study

Chapter 2 discusses the lessons learned from the five case studies. Chapters devoted to each case study follow that analysis. The last chapter gives overall conclusions drawn from the research.

Table 1.2
Case-Study Companies

Study Company	Industry	Revenues ¹	Employees
Chase Manhattan Corp. ²	Financial Services	\$22,982	74,800
DuPont	Chemical	\$26,918	94,000
Microsoft Corp.	Technology	\$19,750	31,575
United Grain Growers Ltd.	Agriculture	C\$1,832	1,600
Unocal Corp.	Energy	\$6,057	7,550

¹ Most recent fiscal year in \$ millions U.S. (except for United Grain Growers, which is in \$ millions Canadian).

² J.P. Morgan Chase & Co. as of December 31, 2000

Endnotes

1. Thomas A. Stewart, "Managing Risk in the 21st Century," *Fortune* (February 7, 2000): 202.
2. This was illustrated strikingly by the case of a 15-year-old New Jersey boy who manipulated the prices of 11 stocks he owned by posting false messages on Internet bulletin boards and in chat rooms. In September 2000, the Securities and Exchange Commission charged the boy with stock fraud. He paid \$285,000 to the U.S. Treasury to settle the case (Kevin Peraino, "A Shark in Kid's Clothes," *Newsweek* (October 2, 2000): 50.).
3. Richard E. S. Boulton, Barry D. Libert, and Steve M. Samek, *Cracking the Value Code—How Successful Businesses Are Creating Wealth in the New Economy* (New York: HarperBusiness, 2000): 181.
4. See the DuPont case study in chapter 4.
5. National Association of Corporate Directors, *Report of the Blue Ribbon Commission on Audit Committees* (Washington, DC: National Association of Corporate Directors, 1999): 2–3.
6. Financial Executives Institute, "Survey: Audit Committees Should Focus on Key Business Risks," FEI Press Release, January 12, 2000.
7. New Economy companies are leaders in innovations (Internet, microprocessors, etc.) and include technology, information services, media, telecommunications, and life science companies.
8. "New Challenges Arise as All Business Becomes E-Business," *Washington Post* (September 20, 2000): G1.
9. Michael Mandel, *The High Risk Society* (New York: Times Business, 1996): 9.
10. Economist Intelligence Unit, written in cooperation with Arthur Andersen & Co., *Managing Business Risks—An Integrated Approach* (New York: The Economist Intelligence Unit, 1995): 2.

11. James W. DeLoach, Jr., *Enterprise-Wide Risk Management—Strategies for Linking Risk and Opportunity* (London: Financial Times, 2000): 5.
12. The National Commission on Fraudulent Financial Reporting, known as the Treadway Commission, was created in 1985. The commission is sponsored by the American Institute of Certified Public Accountants, American Accounting Association, Financial Executives Institute, Institute of Internal Auditors, and the Institute of Management Accountants.

Lessons Learned From Case Studies

Risk, then, encompasses the uncertainty of future reward in terms of both the upside and the downside. And opportunity in business arises from managing the future. Companies today must face (and manage) the future knowing that they cannot simply carry on with business as usual.

Richard E. S. Boulton, Barry D. Libert, and Steve M. Samek,
*Cracking the Value Code—How Successful Businesses
Are Creating Wealth in the New Economy*¹

I also need my CFO to be a risk-management wizard, ahead of the pack in figuring out all the things that could possibly go wrong...and finding ways to limit those risks.

Marcia Vickers, “Up from Bean Counter,”
in “The 21st Century Corporation,” *Business Week*²

Enterprise-wide risk management represents a paradigm shift in the way businesses manage the uncertainties that stand in the way of achieving their strategic, operational, and financial objectives. While the old paradigm was a silo approach to risk management—with each risk considered in isolation—the new approach is holistic, integrating the risks across the organization and designing risk response strategies. Some organizations have recognized the need to change and are incrementally implementing the new paradigm. This chapter synthesizes the lessons learned from the five case-study companies.

The case studies demonstrate, in as much detail as the companies would publicly share, how they manage risk. One common theme emerged. Each company believed it was creating, protecting, and enhancing value by managing enterprise-wide risks. Value can be created,

protected, and enhanced by knowing risks, knowing how those risks relate to each other and whether offsets occur, and knowing the risk tolerance level of the company and its stakeholders. Value can also be created, protected, and enhanced by knowing the effect risks have on both financial position and earnings, knowing the probabilities of achieving an earnings goal, and knowing the likelihood and significance level of each risk. In addition, knowing whether inconsistencies exist across the company in risk management and knowing whether resources are being efficiently allocated based on risk strengthens the likelihood of creating, protecting, and enhancing value.

Finally, value can be created, protected, and enhanced by managing risk to reduce earnings volatility, by building risk-based incentive systems, by seeking new opportunities to finance and/or transfer risk, and by having infrastructure in place to manage and oversee the entire effort. We highlight some of these “value” lessons below.

At the outset, there is one overriding lesson from these five studies:

Value Lesson 1

A cookbook recipe for implementing enterprise-wide risk management is not feasible because so much depends on the culture of the company and the change agents who lead the effort.

Risk Identification Process

Before a company sets out to manage risks, it must know what risks to manage. To some companies, this seems obvious at first. In DuPont’s early days, everyone understood and respected the risk of making dynamite. To United Grain Growers (UGG), weather was clearly a risk that had a significant effect on the company’s performance. In Chase’s early years, the risk in the loan portfolio could dramatically alter the corporation’s earnings. For Unocal, the risk is to find more oil or go broke. For Microsoft, it is to innovate continuously before someone else replaces you and takes your market share. Yet in today’s rapidly changing, complex, and global-based businesses, risk is not always quite so apparent.

While ultimately the chief executive officer (CEO) is the company's chief risk management officer, decision makers at all levels should consider risk management as a critical part of their job. For that to occur, they must be aware of the risks their organizational unit faces as well as the risks that confront other units and the organization as a whole.

Value Lesson 2

To manage effectively in today's business environment, companies should make a formal, dedicated effort to identify all their significant risks.

The study companies used no single method to identify risks but did follow several common approaches. In Microsoft, the risk management group continually promotes risk management to the business units. Microsoft's risk managers say that they "evangelize" the business units about the importance of identifying risk and considering its potential impact and its likelihood in business decisions. In addition, Microsoft's risk management group emphasizes face-to-face time with business units. This approach allows the risk management group to be aware of "perhaps 90 percent of the risks facing Microsoft," according to Microsoft's treasurer.

Microsoft also uses scenario analysis to identify its material business risks. As Brent Callinicos, treasurer and head of Microsoft's risk management group, states, "In the past, we have looked at silos of risk. For example, we may have looked at property insurance when we considered the risks of an earthquake and thought about protecting equipment, damage to buildings, and that type of thing." But as Callinicos notes, "The real risk is not that buildings get damaged but that it causes business interruption in the product development cycle and that you cannot do business." The risk management group identifies various risk scenarios and initiates the thinking about those scenarios. This group also benchmarks its scenarios against events that actually took place at other companies.

Another common risk identification approach is for business units to undertake self-assessments. At Chase, managers at various levels complete self-assessment scorecards to identify their unit's risks. Similarly, Unocal requires annual risk assessments in each business unit. Unocal emphasizes the dramatic change in its new risk-based approach

this way: “Instead of worrying about 800 check marks in an auditor’s workpaper, management would, through dynamic self-assessment, identify the areas of greatest risk and devise steps to manage those risks.” Another lesson can be seen in Unocal’s emphasis on “dynamic.” Risk identification is not a one-shot solution. Businesses change and so do their risks. UGG acknowledged that the list of risks it had identified was already outdated.

Value Lesson 3

Various techniques are available to identify risk, and once identified, the process of identification should be dynamic and continuous.

In addition to risk identification through self-assessments, both Unocal and UGG use team meetings of key employees or brainstorming sessions to identify their risks. Unocal encourages each business unit to establish a team and have the team meet to systematically list risks. These meetings are not just about financial risks; they seek to identify *all* risks—everything from government regulations, technology, and competition to risks facing each business process.

The risk identification sessions also include a risk-ranking component. The rankings are based on dollar effects, severity, or impact. This analysis helps management learn two things. First, it shows the perceived importance of the risk. Second, by sorting risks according to their importance, management can use the list to develop a risk management strategy and to allocate resources efficiently.

Value Lesson 4

Risks should be ranked on some scale that captures their importance, severity, or dollar amount.

Another aspect of risk identification includes assigning probabilities to the risks. For example, after Unocal’s business units list risks, they rate them on probability. Microsoft also assesses risks on more than the dollar level. Instead of probability, Microsoft assigns a frequency to each risk. The combined importance level (or significance level) and

probability (or frequency) can be projected on a risk map (see figure 5.4, page 137, for Microsoft's map). Even though DuPont does not generate risk maps, the company does acknowledge the value of knowing the frequency and severity of risks: "Our concern [in how we manage risk] was more focused on staying away from the high frequency–low severity risks because we think that is managed quite well. We wanted to focus on the low frequency–high severity risks because those are the ones that tend to have perhaps a big hit. We still need to refine that and start thinking more quantitatively." Risk lists and maps help management to visually grasp all risks and know which are the most important.

Value Lesson 5

Risks should be ranked on some scale of frequency or probability.

Rankings of risk importance levels may or may not be accurate. For example, UGG had one risk ranked high but later measured the risk quantitatively and found that it was not nearly as high as UGG had thought. Risk measurement can assist companies in knowing the true importance of a risk. Managers should strive to make conscious decisions about risk. Risk measurement can help them make those decisions.

Risk Measurement

The only way to know that a company is not wasting resources, allocating capital inefficiently, or spending time on the least risky areas is to measure risk. Measuring risk can be as simple as ranking it. For some risks, a subjective ranking is all the measurement that can be done. Microsoft and UGG acknowledge that some risks just are not measurable. Microsoft states, "The approach we have taken in financial risk and business risk is to try to quantify what we can and not necessarily worry that we are unable to capture everything in our measurement." Unfortunately, in many instances data are available for the high frequency–low impact events, while few data are available for the low frequency–high impact events. When it can be done, however, risk measurement

helps to validate the real level of risks. Otherwise, companies may be operating on intuition and experience only.

Value at Risk and Stress Testing

The most developed areas for risk measurement are in financial risks, and the most common approaches for measuring and assessing financial risk are value at risk (VAR) and stress testing. VAR was originally developed for use in financial institutions to enable them to assess their capital at risk in different financial market transactions and their risk-adjusted rates of return. The technique is now finding much wider application. (See figure 2.1 for an overview of VAR.) Chase

Figure 2.1
Value at Risk (VAR)

As noted in the Microsoft case (chapter 5), “VAR measures the worst expected loss over a given time interval under normal market conditions at a given confidence level.” VAR is a monitoring tool, not a forecasting tool.

The use of VAR began in the banking industry. VAR allows market risk to be reported at the instrument, portfolio, and aggregate fund levels across different asset and security levels.

VAR is an easily understood, single reporting figure. For example, VAR will tell the user that losses are not expected to exceed \$X in more than X out of the next X months with X percentage confidence. It is most useful in actively traded liquid markets and can be used for information reporting and trading limit allocation. To calculate VAR, one needs the current market value, the volatility or standard deviation of that market value for a marketable instrument, an assumed risk horizon, and a required confidence level.

VAR relies on historical data and can take into account only risks that can be measured quantitatively. Therefore, it cannot consider drastic events or risks such as political, liquidity, personnel, or regulatory risks. Because each component of the portfolio must have large amounts of historical data related to it in the system, less actively traded instruments do not provide the volume of transactions needed or the constant valuation of the investment. Another consideration is the difficulty in unwinding the investment when something goes wrong, which may cause additional losses beyond those predicted by the VAR model. VAR assumes that the portfolio is held constant over a period of time. It is not a measure of the largest loss that will occur but of the level of loss that has X percentage probability of occurring.

uses VAR and stress testing to measure its market risk. To Chase, “VAR is a measure of the dollar amount of potential loss from adverse market moves in an everyday market environment. The VAR looks forward one trading day and is the loss expected to be exceeded with a 1 in 100 chance.” Stress testing examines the impact of worst-case scenarios on the trading portfolio. Microsoft uses VAR and stress testing to manage market risks. To measure VAR, Microsoft uses three separate systems to generate the numbers. The company wants “to make sure at least directionally the risk is the same and, hopefully, from an order of magnitude standpoint the risk is the same as well,” says Callinicos. The VAR calculation provides a way to respond when someone asks, “How much risk is Microsoft taking?”

It is important to recognize that a measure of financial risks may have implications for managing nonfinancial or general business risk. Microsoft ensures that financial risk wears a “business hat” by using the information on financial risk to improve decision making regarding other business risks.

Value Lesson 6

Measure financial risk with the most sophisticated and relevant tools available, such as VAR and stress testing.

Earnings at Risk

VAR may be one of the more advanced techniques, but it is not the only one. DuPont admits that VAR was not much help to its risk managers. It was not always clear how to manage VAR and notional amounts,³ and management throughout the organization did not always understand VAR. As an alternative, DuPont chose to use earnings at risk (EAR), which measures the effect of a risk on DuPont’s earnings. DuPont comments on how the company views earnings at risk:

We can quantify earnings at risk in any given quarter just from market movements. To do so, we first look at all cash flows with an identifiable market risk factor and then aggregate exposures to validate any natural offsets. Next, we run thousands of simulations integrating market risk factors, volatilities, and correlations and how

they could potentially impact earnings. For this exercise, we look at the extreme left tail of the potential earnings distribution. Let's say, for illustration purposes, that total earnings at risk for all of our market exposures is potentially \$100 million. Now that we have it quantified, let's talk about what our appetite [for risk] is. It's similar to what we did with the insurance side—what do we think the company can live with? Is \$100 million right or should we manage the risk in a way that brings it down to \$50 million? We can then run all different kinds of scenarios and strategies to see what's the most effective way to manage the risk to bring it down to \$50 million.

By using EAR, DuPont manages risk to a specified earnings level based on the company's risk appetite and the potential appetite of investors. That is, the company can decide how much risk it is willing to accept (after controls and transfers⁴) and have a measure of how that risk affects not notional amounts, but earnings. This information allows managers to see the big-picture relationship between earnings, risk, and expected earnings and the likelihood of meeting certain earnings levels (something that may be considered critical in today's stock market).

Value Lesson 7

Develop sophisticated tools and measures that meet the organization's needs and that management can easily understand.

Value Lesson 8

Know your company's and your shareholders' appetite for risk.

But can companies use sophisticated techniques to measure nonfinancial risk? According to Chase's vice chairman, Marc Shapiro,

[The management of] operating risk is newer, and much less advanced. We've just set up a group to do what we're doing in credit risk and market risk. In credit risk, we probably have a 20-year credit history, in market risk we have a 10-year history, and in operating risk, we've got a no-year history but our thought is, we need to do much of the same thing.

I'm not a believer that you can quantify operating risk in exactly the same way [as the other two]. In other words, I think that a lot of operating risk is so random that it is hard to develop models that are reasonable predictors. But I think what you can do is share best practices, look at an overall, executive-level view of the system for controlling operating risk, develop the metrics that you need in each business, and then have an overall monitoring for those metrics. And probably do a better job of allocating capital than we're doing. That's what the goal is.

This “share best practices” concept came up at other companies also. DuPont's experience with measures such as VAR led it to examine its traditionally insurable risks with a more rigorous and quantitative process. DuPont tries to get risk profiles and worst-case scenario probabilities (similar to stress testing) even for nonfinancial risks. Microsoft also sought to bring the financial risk management discipline to its business risk areas.

UGG states, “It is much harder to try to get a handle on the less easily measurable business risks. How do you identify a value at risk model for those kinds of situations?” However, UGG did apply more rigor to some nontraditional financial risks by using a variation of VAR. Using historical data, UGG calculated gain/loss probability curves for some key risks. Such curves reflect the likelihood of losing or gaining money from a risk. UGG also used those data to plot the effect of risks on earnings per share. Again, this analysis was done on what are traditionally considered nonfinancial risks. The company further used these data to determine the actual effect of risks on revenues over a certain time period—learning along the way that certain risks contribute as much as 50 percent of the variance in revenue.

Value Lesson 9

Apply more rigor to measuring nonfinancial risks whenever possible.

It is clearly valuable to know the real level of risks facing a company. That knowledge comes first by ranking risks and next by measuring risk (if possible). Only on the basis of that knowledge can value-maximizing decisions be made. Although some limitations in risk measurement

exist, innovations are occurring in this area. Armed with the knowledge of risks, managers can set out to manage them more effectively.

Risk Response Strategies

“What can you do to improve the way this risk is being managed?” is a question on a Unocal risk document. It is a question that all companies should ask themselves. In effect, companies can choose to accept, transfer, or mitigate risks. A company’s risk appetite (or that of its stakeholders) may influence its approach. For example, companies accept risks because they can bear the burden or because they have either mitigated the risk or transferred it to a level that the company is willing to accept.

Value Lesson 10

Companies are choosing various combinations of acceptance, transfer, and mitigation to manage risk.

Building controls in response to risk is a form of mitigation. A Unocal document states that after a unit identifies risks, it should evaluate existing controls to mitigate the high-priority risks. DuPont chooses a balanced approach in some areas. For example, the company accepts certain operational safety risks by self-insuring because it believes it has extensive controls over that area that allow it to accept a higher level of risk. However, DuPont’s Bruce Evancho warns, “I’ve always said if you’re doing that, you need to continue to monitor to be sure that you are investing in prevention, because if you ever let down, you’re setting yourself up for a problem.”

Value Lesson 11

Decisions regarding control (an application of mitigation), acceptance, and transfer are dynamic—they must be continuously reevaluated.

Chase has used a combination of acceptance, transfer, and mitigation to change the shape of the risk in its loan portfolio. Chase’s loan